DOCUMENT RESUME

ED 203 462 EA 013 650

AUTHOR Louis, Karen Seashore
TITLE The Role of External Agents in Knowledge Utilization, Problem Solving and Implementation of New Programs in Local School Contexts.
INSTITUTION Far West Lab. for Educational Research and Development, San Francisco, Calif.
SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C.
PUB DATE Mar 80
CONTRACT 400-80-0103
NOTE 79p.; For related documents, see EA 013 645-649.

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS *Change Agents; Change Strategies; *Educational Innovation; Elementary Secondary Education; Individual Characteristics; Information Utilization; Research Needs; *Research Utilization; Technical Assistance
IDENTIFIERS Knowledge Utilization

ABSTRACT

The role of external agents in educational knowledge utilization, the factors affecting agent impact, and future research needs comprise the topics of this literature review. Based on existing definitions, the author identifies the external agent as an individual or group outside the client system whose objective is to help the clients enhance their own functions. An external agent's role depends on the knowledge utilization context, including the location of knowledge generation, the type of knowledge (research or craft), and whether clients use it for decision making, enlightenment, or capacity building. Several factors may affect the agent's impact, among them the agent's personal characteristics, expertise, scope of activity, similarity of status with the client, and initiative and intensity of outreach, as well as whether the agent consists of a team or an individual. Besides an improved theoretical framework, future research needs include investigation of the contexts, costs, and benefits of external agent use; clients' needs and wants; and agents' skills, characteristics, and strategies. (RW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Prepared for:
National Institute of Education
Dissemination & Improvement of Practice
Research and Educational Practice Program

ED203462

THE ROLE OF EXTERNAL AGENTS IN KNOWLEDGE UTILIZATION, PROBLEM SOLVING AND IMPLEMENTATION OF NEW PROGRAMS IN LOCAL SCHOOL CONTEXTS

Karen Seashore Louis
Abt Associates
March 1980

INTRODUCTION

The development of external roles to assist local schools in knowledge utilization has been a controversial topic in the education arena for some time. As early as 1970 some individuals in the federal government recognized that knowledge utilization, at least knowledge utilization which involved research information, was unlikely to take place for many educators without some form of assistance. (U.S. Office of Education, 1970) Prior to the mounting of the first federal effort to develop external roles in the field of education, the Pilot State Dissemination Program, a number of "experts" had been arguing in support of roles which paralleled those of the organizational development specialist or the agricultural extension agent. (Center for the Advanced Study of Educational Administration, 1965, Havelock, 1969, Jung and Lippitt, 1966).

On the other hand, relatively large amounts of support from the Office of Education has been directed toward the development of packaged information intended to be used with limited or no technical assistance. The most

EA 013 850

extreme form of this developmental activity were the PIPs products. These Project Information Packages were intended to provide LEA personnel with all of the information that they would need to install and operate effective new programs in compensatory education and basic skills. (Stearns, et al., 1975) In addition to the developmental funds that were put into the PIPS Program, other monies were being directed to improved packaging of and access to ERC and LAB products, presumably to facilitate independent practitioner use of these documents.

A third perspective has focused on the need for local invention as opposed to external importation of knowledge. Some opponents of education R&D have argued that there is too little information of value to support an extensive dissemination system. Support for this position has been provided from the Rand Corporation's study of seed money programs (Greenwood, et al., 1975) which suggested strongly that school improvement activities that were imported from outside of the district were less likely to be implemented than those that were internally generated.

Because any arguments supporting a research agenda on external agents must rest or fall based on judgments as to whether such agents are necessary, some elaboration will now be made of the arguments against external helping roles and those in favor of external helping roles.

A. ARGUMENTS AGAINST THE NEED FOR EXTENSIVE RELIANCE ON EXTERNAL ROLES

Opposition to the deployment of external agents to improve knowledge utilization in schools is generally based on two primary arguments. First, there is some evidence suggesting that in most cases where schools employ external change agents, problems ensue and effective change does not occur. This argument has been most strongly voiced by Greenwood et al. (1975):

> When an LEA adopted projects designed by [outside consultants] the quality of implementation surfered. District staff tended to distrust 'outside experts' and had little patience for complex project rationales (p. 23).

Indeed, the authors of this report go so far as to say that natural school system resistance to outside technical assistance can be overcome only through extremely high levels of administrative support (p. 24). The problems incurred by local schools in using external experts are also amply supported by studies of districts participating in the Rural Experimentatal Schools program (see Rosenblum and Louis, 1979), and by case studies of OD in schools (Fullen, et al., 1978) Even those who see the need for some supportive external helping roles express doubts about the significance of these, as opposed to the development of internal change agents:

> ...the history of industrial OD suggests that the main diffusion means centers around the development of strong capable internal practitioners, often with an advocacy position (Miles, 1976, p. 249).

Quantitative findings that support this position are also drawn from the recent study of federal programs supporting educational change. Survey data indicate strongly that one of the factors most highly associated with effective implementation is local development of materials (Berman and Pauley, 1975, Berman and McLaughlin, 1977). The survey data that examine the impact of external technical assistance on implementation and continuation provide, if anything, even more compelling support. The use of outside consultants has been found to be significantly negatively related to the perceived usefulness of the training in federally supported change efforts (Berman and McLaughlin, 1977)*.

This reasoning leads almost inevitably to a policy position that de-emphasizes both external assistance and external information. As Mann states, the basic assumptions of a "user driven sytem" require that a "thousand wheels be reinvented":

---

* Lest a quick critic of this study note that most schools use consultants on a a rapid in-and-out basis, which would not allow the consultant to provide effective assistance, the Rand data suggest that there is no correlation between the amount of assistance received from outside consultants and the usefulness if assistance.

> The nearly idiosyncratic power of place...has been seriously underestimated. Each site seems compelled...to a drudging re-discovery of the inadequacy of sleds and rollers and then to discovery of the usefulness of an axle stuck through a disc. While that may seem horribly inefficient, it should be compared to the situation in which heaps of wheels lie around because of the local conviction that "they won't work here"... (p. 300)

As a direct consequence, a number of highly placed federal officials have been vocal advocates of a change in policy which would support local program development as opposed to dissemination of information from other sources (see Raspberry, 1978).

A second argument that is used to oppose systematic development of external helping roles for schools lies in a pessimistic view of the ability of schools to engage in meaningful change. The inability of external agents to overcome barriers to change is stated perhaps most boldly by Derr (1975) who claims that Organizational Development approaches to change in schools are destined to fail for a number of reasons.* First, there is a lack of common indicators of performance in school: "(T)he importance of this phenomenon cannot be overemphasized. There are no signposts along the way to guide educational innovations to modify and improve them." (p. 232) Second, the vulnerability of schools to their environment--that is, public relations--requires schools to spend time reacting to external pressures rather than improving long-term planning and functioning. Third, the high autonomy needs of professional educators interferes with effective collaboration and innovation, as does the relatively high level of independence in performing the work. Perhaps more critically, however, Derr points to a "civil servent mentality" in schools (p. 235). This mentality impedes innovative efforts through union contracts which do not allow professionals to remain after school without pay and which makes it difficult to bring in external people for sustained contact over a period of years. Finally, the lack of economic resources available to schools, particularly in the current environment, makes it difficult

---

* General discussion of inherent characteristics of schools that make them resistant to change have also been presented in Miles (1964), Louis and Sieber, (1979), and Pinaus (1974), among others. Note that Miles (1976) has critiqued Derr's assumptions about OD principles that are "violated" in schools.

to allocate adequate funds for a major school improvement effort. Hiring or supporting an external consultant, teacher release time, conferences, etc. under Proposition 13 conditions may be impossible. In sum, the Derr argument may be succinctly stated: Schools do not have the structural characteristics, or the personnel and financial resources to profit from the major change activities that typically involve external helping roles.

B. ARGUMENTS IN FAVOR OF EXTENSIVE RELIANCE ON EXTERNAL ROLES

Those who support the development of external helping roles draw upon a different set of literature and assumptions. A long tradition of research is cited to support the utility of external agents.

An early field experiment (Glaser, 1965), showed that organizations could be made more receptive to research results through the use of external consultants and externally sponsored conferences. Recent research in education has produced a number of studies which support the efficacy of an external helping role in increasing local school use of information. Sieber, et al. (1972), for example, show that external education extension agents in the Pilot State Dissemination Project had a significant impact on the level of requests for information (receptivity). In addition, Herlig (1975) and Louis & Sieber (1979) have shown that the external agents also had a significant impact on information use under some circumstances. Emerick and Peterson's (1976) study of the National Diffusion Network produced findings which strongly support the assumption that an external agent may have a significant impact on implementation of innovations. The effects of external agents (both Developer/ Demonstrators and State Facilitators--the two external helping roles associated with the National Diffusion Network) remained even when important school

characteristics, such as motivation toward change local support for the project, administrator support, and sense of participation, were controlled for in regression analysis. This finding is quite critical, for it is these innovation support characteristics which had a great deal of impact on the conclusions drawn from the Rand Corporation Study of federal programs supporting educational change. Early evidence from the ongoing study of the R&D Utilization Program suggests that the external agents supported through this program play a critical role in helping local schools to maintain a commitment to long-term planning and change programs (Louis et al., 1979). Similarly, the accumulating results of research on the outcomes of OD Programs in schools shows that externally induced programs involving strong consultive roles from third-party trainers or experts can have significant impact (see, for example, Miles, et al., 1978; Bartunek and Keys, 1970; Schmuck Runkel and Langmeyer, 1971). Those who support the need for external agents may point with some pleasure to the apparent robustness of this set of findings, in which the impact of an external agent appears to hold in the laboratory, in field settings and in a wide variety of different roles ranging from the nonintensive "extension agent" role (found in the Pilot State Dissemination Project or in the state facilitator role in the NDN project) to the relatively intensive and long-term arrangements found in many OD interventions.

C. SUMMARY

The position taken in this paper will, therefore, advance beyond the debate about whether or not external agents are useful. The potency of the external role in stimulating knowledge use will be assumed, and we will address a set of questions that have greater research and policy salience at this point: first, what is meant when we say that a strategy for change and knowledge utilization that employs external agents "works"; second, under what conditions the agent is effective, and third, what additional research

is needed in order to arrive at some broader set of theories and policy decisions regarding external roles in stimulating knowledge utilization. The discussion will be grounded in the empirical literature related to external agent impacts in schools.

In order to address the above questions, it is necessary to base the discussion on a clear definition of the phenomenon that we have called the "external agent". In addition, in order to further ground our discussion, a framework for looking at the knowledge utilization contexts in which external agents may be useful will be developed, and the implications of these contexts for agent roles will be briefly discussed. Once this groundwork has been laid, a presentation of specific research findings related to the impact of agent roles and behaviors upon schools and individual educators will be discussed, with aprticular emphasis on consistency of findings, and areas where research is particularly impressive or thin. Finally, some implications for a research agenda on the role of external agents will be developed.

THE ROLE OF EXTERNAL AGENTS IN KNOWLEDGE UTILIZATION: DIMENSIONS FOR ANALYSIS AND ACTION

A. A REVIEW OF CURRENT WAYS OF DEFINING EXTERNAL AGENT ROLES AND TITLES

A recent review of the literature (Glaser, 1976) pointed to over a dozen job titles that had recently been applied to the role of the external agent. Among those which this review uncovered were: social engineer, linking agent, popularizer, change agent, research translator, learning engineer, applied behavioral scientist, and research utilization specialist. This plethora of titles suggests the wide variety of definitions which are applied to the role of the external agent. Many of these different definitions suggest different ways of approaching the problem of fostering improved knowledge utilization among organizations and individuals.

Archibald (1968), for example, sees the applied social scientist as an expert who has a reformist interest, that is, one who seeks both knowledge and change. This definition assumes that the knowledge producer or at least part of the knowledge production system is in fact a linking agent. Somewhat similarly, Rogers, et al. (1976) describe the extension specialist as an individual who is a member of the knowledge production community in the university, but who is himself a sysnthesizer of knowledge, rather than a producer of knowledge. Rogers and Shoemaker (1971) have developed a more general definition of the agent's role:

> A change agent is a professional who influences innovation decisions in a direction deemed desirable by a change agency. (p. 227)

Zaltman and Duncan (1977) also view the external agent as a change agent:

> A change agent is any individual or group operating to change the status quo in the client's system such that the individual's involved must relearn how to perform their roles. (p. 186)

Note that Zaltman and Duncan's definition differs from that of Rogers and Shoemaker primarily in allowing for an autonomous change agent (one who is not connected to a "change agency") and that they emphasize certain types of change as a criteria for determining who does and who does not belong in this category.

Moore, et al. (1978) add a different dimension of specificity to their definition which emerged from their study of groups involved in promoting local educational change:

> (A technical assistance group provides) long-term, face-to-face assistance to specific school communities in an effort to facilitate local change. (p. 16)

Note that the distinctive feature of Moore's definition is that the specifcity of the strategies by which the external influence is delivered.

Others, however, reject the implicit assumption of definitions such as those quoted above that the external agent has specific objectives in mind for the targeted client organizations or individuals. Blumberg (1976) severely criticizes approaches that bring, along with the external agent, an externally imposed goal:

> (The term interventionist implies: a) helping the client collect and understand valid information about his problem; b) helping the client develop a system of free choice; and c) helping the client develop internal commitment to the processes authentically if that person is "out to change things." The use of them means that the user has no particular goal in mind for the organization but is willing to trust that the people involved with valid information at hand will develop goals and problem solutions which for them best fit the situation. (p. 226)

Similarly, Miles and Schmuck (1971) present no explicit definition of the O.D. specialist or consultant but define the role of the types of organizational interventions that are acceptable within the O.D. framework (see Miles and Schmuck, 1971: 9; also Miles, et al., 1979). In both cases the external role is seen as a pair of hands that transmit a set of strategies or technologies for improvement in the client system. Cates' (1978 recent review of educational literature related to external areas also takes a functional rather than a definitional approac. The core external agent identified by Cates

are planning, resource utilization, communication, problem solving, process helping, implementation, and evaluation. (Cates, p. 5) The author implies, however, that the inventory of functions may not be useful for definitional purposes, since there is still considerable confusion and disagreement about the meaning of these functional labels (pp. 17-18).

There is, apparently, considerably greater consensus among those who attempt to define external roles as "linking" roles. This consensus exists across as well as within disciplines. For example, Piehle's (1975) definition is as follows:

> (Linking) agents operate at the interface between new ideas and products and current educational practice, dealing regularly with both resource and user systems for the purpose of helping the two to interact constructively. (p. 3)

The Social and Rehabilitation Services Agency similarly defines the role of the research utilization specialist:

> (RUS's serve) as an action link between the producer and consumer of research results, bringing new and more effective findings to the attention of practitioners and administrators (and) promoting their adoption by ongoing programs. (Hamilton and Muthard, 1975: 63)

Most definitions of linking agents do not explicitly refer to externally imported desirable outcomes in the target or user group. These are, however, frequently implicit, and most authors who discuss this role would agree that

> (the role of) the linker...brings greater rationality to change oriented decisions in school systems by increasing the nature and extent of information utilized in decision-making. (Nash and Culbertson, 1977: 2)

Those who do not explicitly espouse the objective of improving rationality in school systems will frequently refer to "improved problem-solving." Crandall, 1977: 216).

B. SOME PROBLEMS WITH DEFINING EXTERNAL AGENTS: WHO THEY ARE AND WHAT THEY DO

In order to define and understand roles which external actors play in knowledge utilization processes in local schools, it is necessary to come to terms with the diversity in the definitions presented above. Defining phenomena is not, in general, the most scintillating aspect of the synthesis process. It is, however, a critical part in laying out the assumptions and issues that must be addressed. Given the relative paucity of empirical studies of

agents in school improvement programs, the examination of definitions is a major means of illuminating weaknesses or gaps in current approaches to research in this area. In the following paragraphs, therefore, some of the problems with existing definitions of external roles will be discussed and perspectives that will be used in the remainder of this paper will be articulated. This discussion will range from the very concrete (what will and will not be considered an external agent for the purposes of this paper) to the relatively broad (problems in defining common terms in the context of school knowledge utilization processes).

The Definitional Dilemma: General Versus Specific

As Hood and Cates point out,

> Conceptually, anyone who facilitates the transfer of educational knowledge could be considered the linking agent, but this simplification leads to a rather unacceptable situation, since virtually anyone in the field of education may be involved in the transfer of knowledge to someone else. (Hood and Cates, 1978: 2)

Attempts to narrow the definition, on the other hand, generally involve specifying either the source of the information (such as research information), the technique by which information is to be transmitted (for example, as in O.D. intervention strategies or "face-to-face assistance") or specification of outcomes (such as planned change, utilization of R&D products or improved organizational health). While each of these limitations has its advocates, the objective of this paper is not to provide recommendations or to exhort but to attempt a preliminary definition of the arena for action and research. For these purposes, greater specifications may lead to loss of conceptual generalizability.

However, Hood and Cates' dilemma should not be ignored entirely. The study of external actors in the knowledge utilization process cannot encompass every aspect of knowledge exchange that occurs within the educational system. Such an agenda would be so broad as to defeat any objective of clearly defining

existing information and desirable researchable knowledge. Two main specifications seem appropriate. First, like Zaltman and Duncan (1976), no direct attention will be paid to the non-purposive stimulation of knowledge utilization and change.

> We do not focus on unwitting...agents, that is, persons who initiate change without a particular intention to do so or even without awareness of their instrumentality as agents... (Zaltman and Duncan, 1976: 187)

As these authors point out, the inadvertent agent may be best viewed as part of the "bag of tricks" or strategies which the conscious external actor can use in working with a system, a group, or set of individuals.

Related to this specification are the distinctions made by Katter and Hull (1976) between different orientations of external agencies involved in providing information or knowledge to schools. The authors classify education information service agencies (EISs) into three types:

- Collection oriented agency provides services to educators largely as a by-product of other activities. The primary goals and objectives of these agencies are to maintain, to build and to service the collection of materials or information.

- Product oriented agencies are concerned exclusively with dissemination of information about a specific product line of educational information. They are not concerned about the system the potential user systems need as much as about selling the product.

- Audience oriented agencies, on the other hand, seek to meet the information needs of clients. It is betterment of the client's system that drives the information exchange, rather than the organizational needs or concerns of the EIS.

The findings of a survey of EIS goals and activities presented by Katter and Hull (1975) suggest that the audience/collection/product typology may be thought of not as a set of distinctive categories, but

rather as dimensions along which external agents and agencies may vary.* Using the typology in such a suggestive fashion, it is proposed that we eliminate from our consideration all agencies and actors that exhibit a low audience orientation. This suggestion is premised on the judgment that such agencies or agents are unlikely, in the long run, to contribute in a major way to the broad federal objectives of school improvement. Or, if they do so, they will do so as inadvertant rather than purposive agents.

A final proposed narrowing of the definition of the external agent is to limit our investigation to human agents. The very concept of human agents or agencies denotes an interpersonal aspect to the exchange or transmission of information. The use of written means of communication or the telephone, so long as these communication channels are personalized, are sufficient to include the agent within our definition. However, if the communication consists only of the transmission of standardized forms or information in an entirely routinized manner, it would fall out of our arena of concern.** Presumably, such an agent or agency could be completely mechanized with appropriate technological advances.

---

* For example, a large proportion of those agencies that were originally classified as audience oriented, were in fact also oriented to the delivery of a standardized set of information products. The authors state that:

> By contrast, the service oriented EIS more closely resembles the product oriented EIS in the pre-determined nature of its response (it) has a prescribed set of responses to user requests...the service oriented EIS has frequently evolved from an audience oriented EIS standardization allows the EIS to respond efficiently to a larger number of requests. (Katter and Hull, 1976: p. 81)

Since the authors were not looking for evidence to suggest that their typology did not "work," we may extrapolate from this that organizations may be high on more than one of these dimensions.

** For example, an agency that conducted individualized information searches would be included. One that had a single "product line" in response to all requests would not.

Public Acceptability of External Agents: The Need for Simple Language

As implied above, the role of external agents in educational improvement activities has not been a prominent policy issue over the last ten to fifteen years. One of the reasons for the lack of greater interest in the role of external actors in knowledge utilization and school change may be the jargon which surrounds both writing and the implementation of such roles. Another may be the lack of clarity in their role definition.

As noted in the beginning of this section, there are dozens of names that have been used to refer to the external agent. Many of these names are either arcane or of obscure meaning to the typical educator or legislator. Thus, for example, the term Linking Agent (probably the most common term in the area of education) brings expressions of disbelief and incomprehension to the faces of policy-makers who are queried regarding their interest in this area (Chabotar and Kell, 1978). Of potentially greater concern is the fact that many of these titles tend to be threatening to the practitioner or client whom the external agent seeks to serve. The title of Research Utilization Specialist which was applied in the social and rehabilitation services experimental five-year program, elicited the following comments from those who held this job title:

> The RUSs were unanimous in the belief that the title Research Utilization Specialist detracted from their acceptance and effectiveness and was not, in fact, appropriate to the position. The word research was a source of considerable resistance...field staff reacted vehemently to the perception of research as evaluative...(one RUS) found that the term research created not only resistance, but also misunderstanding of the job functions...the title specialist was an equal handicap...the RUS was sometimes perceived as a person with detailed, specific knowledge on the subject at times as "the person who knows more and more about less and less."
> (Hamilton and Muthard, 1975: 78-79)

Apparently, the increasing tendency to invent new terminology to refer

not only to the external role, but also to the functions of the external role complicate this situation enormously. For example, the term "process helper" is almost meaningless to a practitioner and is, therefore, not useful to the external actor who wishes to define what it is that he would like to do with or for the client.* While it is certainly beyond the ojectives of this paper to definitively determine what external agents should be called, one may suggest that commonly understood terms such as consultant or extension agent are preferable to new terms which try to capture the novelty of the job.**

In addition to terminology concerns, there is a genuine problem with the explicitness of the role. A major problem with the acceptance of O.D. in school settings is that the dimensions of the innovation are very difficult to define--and may be contradictory in different settings because of the frequency with which the term is inappropriately applied. (Fullen, et al., 1978a: 246) Similar problems have been observed in settings where an educational extension agent is at work, while poorly articulated roles may, in some cases, work to the agent's advantage, they make acceptability to local administrators and teachers problemmatic in the absence of positive personal experience (see Louis and Seiber, 1979), Chapter 6). Lack of explicitness of the "innovation" of a new educational role causes many of the same problems in diffusion and implementation as in the case of curricular or administrative innovations. (see Charters and Pellegrin, 1973). It is important to emphasize low explicitness does not imply that

---

* If any reader is inclined to doubt the reasonableness of a concern over the use of language to describe external experts or others who help to bring new knowledge to schools, let them first imagine themselves responding to any inquiry regarding their occupation with a cavalier--"oh, I am a knowledge utilization specialist"--oh, I'm a linker." The difficulties of communicating the seriousness of one's position after using as an introduction a title which is perceived as having little meaning at all is well understood by this author, who has experienced problems trying to explain to others what it is that she studies.

** The novelty may also be the titles and low role explicitness that are given to agents in demonstration projects related to the difficulty of institutionalizing such individuals and their job functions when demonstration monies are gone.

immediate steps to achieve greater clarity and specification are appropriate. Some observers have concluded that the educational extension agent is successful in large measure because of the enormous flexibility and lack of bureaucratization in the role. (See Louis and Sieber, 1979.)

Roles and Goals

The majority of current approaches to specifying the roles of external agents are based on explicit or implicit judgments about the objectives that will be achieved through the use of such agents. In particular, there is an assumption that the external agent's major function is to import research information to facilitate the adoption of innovative programs in schools. It seems obvious that this assumption about objectives and outcomes of using external agents is derived from the dominant research tradition that is associated with the study of information use. The study of information which is firmly grounded in the agricultural extension program. (See, for example, Rogers and Shoemaker, 1971.) While there are other research traditions which examine information diffusion, these have not had nearly the impact on the general consciousness of those concerned with information use as has the image of the stalwart county extension agent explaining the virtues of hybrid seed corn to a tobacco-chewing farmer. That this image of the county extension agent as the bearer of research tidings to the innovator is far from the reality of the extension agent's actual role (see Rogers, Eveland and Bean, 1976) is of little consequence, for the popular image dominates. In reality, as noted in some of the definitions presented above, this image of the external agent vastly oversimplifies the variety of roles which purposive actors may play.

Another major reason for this definitional bias lies in the source of concern about knowledge utilization in local schools over the last 10 years. The major funder of research on local school improvement is the federal government. The federal government is also the major funder of research and develop-

ment in both university settings and in applied R&D settings. Not surprisingly, the government is also concerned about the gap between R&D and the use of R&D by local schools that has been pointed to by a number of observers (Gideonse, 1970; Dershimer, 1976). The federal government is interested in determining whether or not the products of educational R&D were utilized in the schools has significantly impacted the view of schools as users of R&D rather than creators of knowledge and innovation. This viewpoint is so deeply embedded in the educational literature that it is difficult to find many examples which run counter to it.

Lippitt (1969), however, takes a more complex view of this issue. Based on a number of studies conducted by the Center for Research on the Utilization of Scientific Knowledge at the University of Michigan, Lippitt distinguishes between two general patterns of research utilization. The first is the "science consumer system" which imports research information from the outside. While this approach does not fully correspond to the integrated R,D,D and U approach first described by Havelock (1969) and elaborated on by a number of others (see Berman and McLaughlin, 1974; Louis and Sieber, 1979), it does emphasize the client system as a user. In addition, Lippitt identifies an internal pattern of knowledge production and utilization, whereby the system itself generates information and uses it. Lippitt argues that the internal as well as the external agent who can facilitate the coordination and production of knowledge. The notion of external agent as something other than a bringer of knowledge has a long tradition in a variety of organizational intervention groups. Thus, for example, the approach used by the Tavistock Institute of Human Relations in London, England tends to view the external agent rather as a therapist for organizations (Jaques, 1950?), as does the external O.D. role described by Schein (1969).

In education, other types of external agent roles are clearly acknowledged, such as the process helper role specified by Piele (1976), and Butler and Paisley (1978), but the view of what such agents do is limited. This is in large measure because of the very limited conception of what information use consists of.

Concepts of Information Use and External Agent Roles

The extremely influential linkage model proposed by Havelock (1969) view the information utilization cycle as involving knowledge producers and knowledge consumers with various mechanisms for connecting these two groups. Without in any way attempting to diminish a major contribution to what was at the time a field with little theoretical basis, the view of information use in the linkage model frameworks has narrowed the conceptualization of knowledge processing in educational organizations, for it has directed attention only to the use of research knowledge imported from the knowledge producing superstructure. Similarly, on the one hand, we should applaud the advances that have been made over the past few years in studying implementation of new programs as part of the school improvement process. (see, for example, Gross, Guiaquinta and Bernstein, 1972; Fullen and Pomfret, 1976; Berman and McLaughlin, 1977, Rosenblum and Louis, 1970.) On the other hand, however, it is important to raise again the point that information may be used in a wide variety of beneficial ways that cannot easily be classified as implementation of a new program -- e.g. for staff development or long range planning (Louis, 1975).

In examining the federal administrative agency as an information user, Sabatier (1978) draws upon two different modes for information provision to agencies. The first is the decisionistic-instrumental perspective defined by Rein and White (1977). The assumption of the decisionistic-instrumental perspective is that "technical information or policy analysis is provided primarily to influence specification decisions...and that the information is provided only if there is some reasonable expectation that it will alter the

the decision outcome." (p. 404)

Weiss(1977), on the other hand, sees one of the main functions of providing information to administer to decision-makers as a process of gradual "enlightenment". (This point is also made in Lindbloom and Cohen, 1979.) In contrast to the decisionist-instrumental perspective, the enlightenment function emphasizes gradual learning on the part of people who make decisions. If the enlightenment function is truely in effect, it is difficult to attribute improvement in a social system to a particular piece of information or a single transmitter of information. Rather, improved decisions should occur over time as a consequence of small infusions of improved information, often combined with "common" knowledge.

Both the enlightenment function and the decisionistic-instrumental function assume, however, that an external organization is responsible for infusing the system. A third way of looking at change might be called the capacity building function. In the capacity building function, information is used in itself to improve the system's capacity for generating information. While the system may never become completely independent of external sources of information, it becomes more able to function autonomously and to solve its own problems without depending on an external source. The notion of capacity building involves changing the ability of the organization itself to search for and to process information.

While federal programs sponsoring improved knowledge utilization frequently aim to increase knowledge use in all of these categories, the objectives are rarely made explicit. Thus, for example, Hamilton and Muthard (1975) state that despite a major project to improve research utilization in the field of rehabilitation, that there was "no clear concept of the meaning of research utilization or of the ways in which such a process could be identified within rehabilitation has been identified." (p. 381)

In addition to three different modes of knowledge use, we have different types of knowledge. First of all, there is the distinction that is increasingly being made between research-based knowledge--knowledge which is generated exclusively through scientific inquiry--and craft knowledge, which is knowledge that is generated based on practice and on experience of individuals who are engaged in practice. While again the distinctions between research knowledge and craft knowledge are not entirely clear, the source of the knowledge has considerable implications for the ways in which it may be effectively transmitted to the potential user and thus for the ways in which an external agent may function in the system. We must not ignore the fact that there is a rather rather significant type of knowledge--common knowledge--which has the greatest influence over behavior in the most rational of decision-making settings. The bulk of information about how to teach, for example, may probably be classified as common knowledge rather than craft or research knowledge: don't scare kids, set a good example, try to be patient, use a lot of repetition. These principals of teaching are derived largely from previous experience of all adults with their own childhood, and children they have known. Common knowledge, while critical to the educational function will not be treated in this paper because it can neither be created nor can it be easily transferred. Rather, it is part of the collective consciousness of a given culture.

A final distinction of importance is between knowledge which is internally generated, that is, knowledge which resides in the system, and knowledge which is externally generated and must be imported. While it may seem on the face of it that there would be a high level of congruence between internally-generated knowledge and craft knowledge and externally-generated knowledge and research

knowledge, these dimensions are in fact distinct. This may be seen in

Cell 1 portrays the situation where research knowledge is generated internal to the group. Examples of types of activities that would fall into this setting include survey feedback activities and self-study, which can be conducted by the group. The existence of this cell may appear somewhat shocking to proponents of the linkage theory who assume that research is somehow "out there" or outside of the practitioner domain. In fact it is very clear that many schools and school systems are happily and very productively engaged in the business of producing "research" information internally. Research-based examples of what might be comprised by this cell include Lyon's study of the use of evaluation information in local school districts (Lyon, 1978) and the types of needs assessment activities engaged in by several of the seven R&D Utilization projects. In the Pennsylvania School Improvement Project, for example, a very well defined approach to the determination of specific weaknesses in basic skills was developed and implemented in more than a dozen participating schools. The approach used in this R&D utilization program emphasized external training, but staff participation in both data gathering and interpretation.* Evidence from research on OD in schools (OD programs frequently involve generating research based information about the organization) suggests that the role of the external agent may be critical, particularly in the early stages where internal change agents or other members of the organization begin to acquire skills to carry out research tasks themselves. The same data indicate that over-dependence on the external agent may result in non-institutionalization of OD activities (see Miles, et al, 1978).

*This, and other statements about the R&D utilization program are taken from field notes or other raw data, unless otherwise noted. For a description of the study, see Louis, et al., 1978 and Louis, et. al., 1979. The Pennsylvania RDU project placed particular emphasis on internal research and data gathering in the "problem identification" stage of their problem solving process.

FIGURE I

KNOWLEDGE UTILIZATION CONTEXTS THAT AFFECT
EXTERNAL AGENT ROLES

	Research Knowledge	Craft Knowledge
Knowledge Internally Generated	I K.U. Goals: decisionistic, enlightenment, capacity building Examples: survey feedback, school self-study or evaluation (Lippitt, 1969)	II K.U. Goals: decisionistic, enlightenment, capacity building Examples: "temporary" systems for adapting curricula that have been previously adopted (Berman and McLaughlin, 1977)
Knowledge Externally Generated	III K.U. Goals: decisionistic, enlightenment, capacity building Examples: dissemination of R&D lab products for adoption by schools (Louis and Sieber, 1979)	IV K.U. Goals: decisionistic, enlightenment, capacity building Examples: League of Co-operating Schools (Goodlad, 1975), Teacher Center involving multiple districts

Regarding other types of research information, such as program or student evaluation, most large school districts are attempting to acquire their own experts to carry out these tasks (Lyon, 1978). However, internal utilization is still a problem (Alkin, 1979) because administrators and teachers may have trouble interpreting the action dimensions of information. Internal researchers may, therefore, need external assistance in learning how to become internal change agents, as well as researchers. In small districts, where it is not possible to employ a broad range of researchers, there is considerable room for the expert consultant who can help the district to design and analyze information that is needed to fulfill any of the knowledge utilization functions discussed above.

Cell 2 involves the intersection between internally-generated knowledge and craft knowledge. An example of knowledge utilization processes falling into this cell would include in-service or sharing among staff members and for the development of new programs or modifications to old programs that are based on familiarity with existing curricula and methods. The findings reported by Berman and McLaughlin (1977) suggest that the process of "mutual adaptation" involves the application of locally designed improvements to adopted programs. The Concerns Based Adoption Model research program (Hall et al., 1976) suggest that adequate implementation will inevitably involve systematic collection of feedback and modification of practice based upon it. This does not occur as a "research" program for the adopter, but as a judgmental adjustment process. The CBAM studies indicate that an external agent may be extremely helpful in assisting individual adopters to reach this stage of thoughtful, craft-based adjustments in practice.

Cell number 3, in which research knowledge and the externally generated knowledge intersect, is the cell that we most typically think of when we think of knowledge utilization in the field of education. This represents an external research community that generated information either in response to needs by potential client groups or in response to their own scientific curiosity. Multiple research-based examples populate this cell. Predominating among them are the Sieber, Louis and Metzger (1972) and Louis and Sieber (1979) reports about the client responses to the Pilot State Disseminations Project, and Emrick and Petersen's (1977) study of the National Diffusion Network. (For a comparison of several studies which fall into this cell, see Emrick and Peterson, 1978.) The functions that internal agents can play under the circumstances described by this cell are also quite well documented conceptually. One of the more coherent recent conceptualizations is presented by Butler and Paisley (1978). The real issue underlying this cell is a question of whether the agent operates with a technological-push objective, (where the goal is to persuade clients to utilize approved or "valid" research information from a preselected knowledge base), or a demand-pull objective (where the client's definition of need stimulates a search for the type of research information that can best be brought to bear upon the question at hand.) (See Louis, et al, 1979.) A technological push orientation almost invariably implies that the agent is intended to facilitate instrumental-decisionistic knowledge use, while a demand-pull approach can be responsive to all knowledge-use types.

Cell number 4, in which there is an intersection between craft knowledge and externally imported knowledge, may be typified by attempts to create networks among a variety of schools, such as the League of Cooperative Schools, and by institutions which are external to a single school and which draw upon

the staff of several schools, such as teachers' centers. Goodlad (1975) emphasizes that the successes of the League of Cooperating Schools were attributable, in large measure, to the role of a central external agency in serving as a "hub," or a clearinghouse that facilitated the partnership between schools concerned about innovative programs and projects. Without the sharing that occured through League brokerage, the expertise that exists within the system would not have been adequately used. Similarly, the objective of many Teacher Centers is not to improve education through the transmission of externally generated research information (see Bu chinal, 1967) but through sharing a craft knowledge among teachers. Another example of a type of approach that would fall into this cell is Havelock and Mann's (1968) study of an attempt to improve the climate for research utilization within R&D labs through the use of capacity building staff seminars. In general, this cell implies that the role of the external agent is more likely to focus on enlightenment or capacity building than upon major programmatic decisions for change. Current wisdom among educators suggests that the most well received forms of inservice education (which focuses on capacity building at the individual level) are often of this type, or mix the use of imported and internally generated craft knowledge.

Again, it should be pointed out, as does Lippitt (1969) that linking agents or generalists should be expected to be able to perform in a variety of capacities within these different cells since the needs of clients may be quite different in each case. Thus, for example, in Cell 1 the client system may have the greatest need for a consultant who is able to help them with the technical aspects of a survey feedback program. In Cell 4, on the other hand, they may have the greatest need for somebody who has the strong administrative skills that are necessary to hold a network of individuals

from different organizations (Sarason & Lorentz, 1979). To summarize, the development of a comprehensive theory of external intervention in schools and in research plans to study the role of external agents in school improvement and knowledge utilization processes necessitates moving away from the dominant and limited mode which views external agents as individuals who bring external research knowledge for the purpose of making specific decisions and implementing new programs. With all due respect to the multifaceted definition of linkage roles developed by Havlock (1969) serious attention to other external roles has been extremely limited in the recent educational policy literature.

C. SUMMARY

The major problem with existing definitions of external roles and knowledge utilization, at least those which predominate in education, is that they are seen primarily as external providers or potential providers of research information. The focus tends to be on the knowledge producing subsystem, which the "linker" serves, and less on the functions of information for schools, school systems and educators, and the ways in which they are likely to respond to external roles supporting knowledge use. Thus, there is an emphasis on change or implementation as the only criterion for involvement of an external agent at a time when many educators are calling professional development and increased professional opportunities. There is a tendency to define external agents using jargon terms unacceptable to practitioners and to other prople who are in arenas of decision making. There is also a tendency to define the linkage roles too narrowly so as not to encompass roles that could be brought into the dissemination and knowledge utilization system and there is a tendency to look at knowledge so narrowly that legitimate ways using knowledge are excluded. As part of this endeavor

to synthesize information, it should be noted that the major gaps that have been pointed out in definitional terms should be attended to in the research arena.

Having criticized existing definitions, one that will appear at once crisp and sufficiently inclusive cannot easily be proposed. Instead we must opt for a broad definition that will hopefully encompass the field but offend few: An external agent is an individual group or organization, located outside of the boundaries of the client system, whose objective is to assist client(s) -- individuals, groups, individual educators, groups of educators of schools -- to enhance the clients' functioning as educators or an educational system. External agents may do many things in the service or school improvement activities. In this discussion we will focus exclusively on those behaviors which are intended to directly enhance the clients ability to locate, generate and use information.

D. REVIEW OF SOME CURRENT WAYS OF DESCRIBING EXTERNAL AGENT ROLES AND FUNCTIONS

Typologies of External Roles

(To be written later: This section will focus briefly on the various ways that different authors have attempted to discriminate between alternative roles that the external agent may take. The reader will be referred to Hood and Cates (1978). A chart summarizing different terms used by the various authors will be reproduced from the above source.)

While the early work of Havelock (1968 and 1969) is useful in showing the complexities and alternatives that may be encompassed within the concept of the external helping role, in general the proliferation of descriptive typologies may be judged to add relatively little to our understanding of how such agents actually function. The main weakness of the effort to develop role typologies lies in their genesis. Rather than being viewed as role segments or alternative personae that an external agent may adopt under different circumstances, there is often the implicit or explicit assumption that these roles

are distinctive and uniquely held by an external agent. Thus, while acknowledging that reality may be somewhat untidy, Crandall (1977) apparently views the distinctions that he makes in linking roles as normative-imperative: they are seen as mutually exclusive, requiring different skills, different training, different support and different types of people. The Butler-Paisley (1978) work similarly views the different types of "entitlement" of an agent to occur "modally," such that in most cases individual agents will perform a limited subset of the functions that are potentially available. They acknowledge the possibility of a "superlinker," who crosses boundaries between the typological distinctions that they make, and also see the need for the development of flexible agents, but express some apparent skepticism about the viability of the "superlinker."

The problem with this approach is that it assumes that the linker's role is controlled by the agent and/or his/her agency. This assumption is most striking in Hood and Cates (1978), who observe that different models of change (which are presumably adopted by a sponsoring agency) imply different and distinctive external agent roles (p. 32). Hutchins (1977) similarly implies that the federal government has an option to choose alternative types of external roles that will fit simply into a model of change and the change process that is preferred by policy-makers. The focus on the agency definition of archetypal roles ignores both the need to tailor external agent roles to client information needs and objectives (a bottom-up approach to defining agent roles), and also existing data that suggest that external agent roles cannot be defined solely by the agent or agency.

Role Ambiguity: An Inherent Characteristic?

Louis and Sieber's extensive analysis of the role-taking behavior of extension agents in the Pilot State Dissemination Program indicates that

successful agents engaged in a relatively lengthly period of role negotiation and role latitude with clients and client schools. (Louis and Sieber, 1979) More recently, Spencer and Louis (1978) have reported data from a survey of 45 external agents in the R&D Utilization program. This data indicates that, in most cases, administrators in client schools have an equal or greater impact on the ways in which agents spend their time, and the activities in which they engage than either their immediate supervisors or the directors of the projects in which they work. Similarly, Moore, et al. (1977) point to mutual adaptation between the technical assistant group and the local setting as being a prominent characteristic of successful change agencies. This process often involves conscious attempts to get feedback on strategies and roles, and to alter them to fit with the local school culture (Moore, et al., 1977; pp. 190-191). R&D Utilization "linking agents" themselves argue that one of the most important characteristics of a successful agent is an individual who can make significant adaptations of their role to fit school needs and capabilities (unpublished proceedings of a conference of RDU agents, May, 1979). Finally, Rogers and Shoemaker (1971) claim that research evidence suggests that change agent success is related to a client rather than an agency orientation.

There are, of course, limitations to the ambiguity that can be maintained in a role such as the one being dealt with in this paper. Moore, et al. (1977) state, for example, that there are limits to the mutual adaptation process. Successful "Technical Assistance Groups" clearly communicate to the client schools the values on which their assistance is based (thus, presumably, weeding out clients whose values would be so different as to cause friction and failure), and also the limits to the type of assistance that would be provided. In particular, the amount of time and effort requires clear delineation in order

to avoid client disappointment. (Moore, et al., 1977; pp. 102-103). Similarly, Haugerud, et al. (1979) point to the need to negotiate some boundaries to the role and service in order to avoid either role overload for the agent, or client anger when their own implicit expectations apparently imply using the external agent as an additional "free" staff person. (Haugerud's recommendations are based on the combined 12 person-years of experience of the agents employed by the North West Reading Consortium' R&D Utilization Project). This, however, does not alter the basic observation that there is greater ambiguity in the external agent's role than in most professional or semi-professional human service jobs.

To summarize, there is a critical need to begin to view the agent's role from a user perspective rather than an agency focused or change model perspective. This shift is necessary for two reasons: first, it is clearly appropriate to base the development of theories of external roles more on the services and/or needs that such individuals may actually perform for clients. Without this perspective, the chances are quite high of implementing yet another educational service or program that frustrates locally creative change by providing the wrong mix of resources. Second, it is essential to recognize the reality of the external helping role: external agents serve at the pleasure of the system, and must always, therefore, adjust their roles to system expectations if they are to have any impact at all. This does not mean, of course, that an agency has little or no impact in sitting boundaries for the role. However, even well defined boundaries are enacted in very different ways by different individuals faced with different school settings. (Firestone and Corbett, 1979) Inappropriate role definitions proposed from higher levels of the organization will simply produce evasive behavior at lower levels, as agents

attempt to deliver the services that their schools wish to have (see esp. Campeau, et al., 1979. For more discussion of the problems of imposing clear role definitions on occupants of field agent type roles, see Louis and Sieber, Chapter 3).

E. DIMENSIONS OF AGENT CHARACTERISTICS AND BEHAVIORS: A REVIEW OF EMPIRICAL LITERATURE

Fortunately, there are alternative ways of examining what we know about linking or external agent roles. An examination of the empirical literature on external roles indicates that there are two major sets of variables that are perceived to influence the impact of the agent upon the client. The first group consists of status variables that characterize the agent and his/her context. Irrespective of the specificity of the role, the following variables may have a significant impact on role performance:

- homogeneity with clients
- locus
- organizational design: single versus team
- personal characteristics or attributes

In addition, there is substantial evidence to suggest that certain dimensions of external agent behaviors and strategies are crucial. These include:

- initiative in outreach to clients;
- intensity of outreach activities;
- external agent expertise;
- scope of external agent activities;
- relationships with boundary personnel in client settings.

The findings and/or controversies present in the empirical literature on external agent statuses and behaviors will be discussed below. It should be pointed out, at this juncture, that the criteria of empirical used in this section is a relatively loose one. Any evidence that is apparently based upon actual experience or study of external agents is admissable, including secondary analyses, and observations based upon "craft" knowledge as well as actual research.

Agent Statuses and Impact

According to Zaltman and Duncan (1977) the case on linking agent statuses is clear:

> The optimally structured Change agent would be a change agent team consisting of an internal and external change agent who are homophilous with the change target system (p. 224).

In addition to this assertion, the authors list 20 additional conclusions that, they claim, are based upon their own and others' experiences as change agents. Indeed, based on the existing literature, there is little that one could say in direct opposition to the above statement. There are, however, considerable ambiguities in a number of the terms that are used, which deserve some discussion.

(1) Homophily: The need for external agent to be of similar status to the intended client is, perhaps, one of the most strongly supported contentions in the change literature. In 1971, Rogers and Shoemaker reported over 40 studies supporting one or more hypotheses related to agent-client homophily. Similarly, Corwin found that the greater the disjuncture between Teacher Corps participants and those of the schools that they served, the lower the level of program innovation. Sieber, et al. (1972) reported that educational extension agents tended to seek out clients in positions that were most similar to those that had been held by the agent prior to taking the extension job, while Moore, et al. (1977) point out that successful technical assistance agencies make explicit their own value biases, to ensure that non-homophilous clients will "opt out."

Before leaping into the strong contention supported by Zaltman and Duncan, however, it is useful to examine another set of literature bearing upon this point. The work of Pelz and Andrews (196)suggests that scientists working in heterophilous environments (e.g., with people in a variety of disciplines) are more creative/inventive than those working in completely homophilous

environments. An additional analysis of the data first presented in Sieber, et al. (1972), revealed that, while the agent's prior status affected his/her choice of clients to some extent, it had no impact upon the amount of time spent with clients of different statuses: all agents, no matter whether they were former teachers or former administrators, spent considerably more time working with administrative clients. (Louis and Sieber, 1979). Furthermore, agent impact, as measured by reported use of information, was not strongly related to homophily of status between agent and client (unpublished analysis).

Perhaps more critical than the above research, however, is that which has been conducted on the "strength of weak ties." (Granovetter, 1973) This literature suggests that innovation is more likely to spread through individuals who are weakly connected to a network--e.g., are heterophilous on some dimensions. (See Sarason, et al., 1977 for a review of the literature on network and information flows). This well-supported hypothesis is highly significant, for it points to the weakness in the homophily hypothesis: most of the research that is cited in support of the need for homophily is, in fact, of two types. The first is based on the study of change agents in underdeveloped countries. In this case, heterophily is quite extreme, and what passes for homophily is, in fact, simply a lesser degree of heterophily. Second, other research from contemporary cultures is largely based on findings (such as that of Corwin) which suggest that too much heterophily is bad. This finding, which is consistent with the notion of the importance of weak ties in the information flow/change process, does not imply that total homophily is good. In fact, Corwin's research shows how high levels of homophily may affect the work of the external agent negatively. Teacher Corps interns who were highly identified with the values of the schools in which they served tended to become "assimilated" to to the local culture, and to avoid making waves through the use of new methods

and approaches for teaching underprivileged children. (Corwin, p. 135). Zaltman and Duncan, in other sections of their chapter on change agents, also point out that a degree of heterophily may be a stimulant in the change process (p. 214).

From a practical perspective, therefore, the assertion of the need for homophily may mean nothing more weighty than imposing a requirement that the change agent have some set of common experiences or background that suits him/her for the job and gives the assistance that s/he provides some "source credibility" (Hovland and Weiss, 1951). In a school setting, clearly some experience with education is an advantage. However, the "craft" knowledge claims that an educational extension agent should have classroom teaching experience if s/he is to be effective as a school-based catalyst of information use is, based on the experience of several non-teacher RDU agents, overstated.

2) Locus: The issue of locus is often, as in Zaltman and Duncan's work, equated with a distinction between internal and external agents. The evidence of the agent of change should be located within or without has been touched on above, where the controversy over the need for external agents was presented.

Research evidence which attempts to directly compare the value of internal and external agents is relatively rare. Based on a content analysis of case studies, Jones (1969) concluded that internal change agents were slightly more successful than external change agents. A laboratory experiment (Scurrah, Shani and Zipfeld, 1971) concluded that external agents were more effective in introducing change, and were also perceived by the target group as more expert than internal agents occupying the same formal position. Corwin's study of the Teacher Corps found that both the external agents and the presence of "young, flexible, supportive boundary personnel" are important in organizational adaptation (Corwin, 1973, p. 255).

Relatively little is known from the existing educational literature about the ways in which internal and external agents relate to one another, however. The most systematic documentation of the existance of these two roles simultaneously, and the relative impact of each of the outcomes of an educational OD process is found in the recent study of Miles, Fullan and Taylor (see especially Miles, et al., 1978 and Fullan, et al., 1979). These data suggest that external agent roles are particularly critical in determining whether an OD program achieves both its anticipated objectives and unanticipated benefits. The external agent is co-equal to an internal change agent and internal consultants (designed as the district coordinator) in determining whether the district will have positive attitudes about further dissemination of the OD efforts. Neither have a great impact upon institutionalization, as compared to other variables, particularly those related to scale and scope of the change activity. (See especially pp.) Thus, it seems that the role of the external agent may be stage related, and weighted toward the initiation, planning and implementation activities that are designed primarily to affect capacity) during the first few years of a major change effort.

The roles of internal agents are reviewed in detail elsewhere (see Fullan, 1980). If suffices to state that the study of relationships between internal and external agents is a tabula rasa waiting to be explored.

There are a variety of contingencies which may affect the impact of locus upon success. Internal location increases the credibility of the external agent, because the client feels that s/he can be counted on. Proximity increases flexibility in responding to client or target group needs (Moore, et al., 1977). An inside change agent is also better equipped to understand and deal with the local culture and resistance to change, and may be more effective at mustering internal support (Zaltman and Duncan, 1977; Berman and McLaughlin, 1977).

On the other hand, outsiders are able to choose their own settings, which helps to ensure successful change projects. In addition, outsiders are less likely to be coopted by other agendas (Moore, et al., 1977). An external change agent is also more effective in dealing with the early stages of a change process, where independence and perceived expertise authority may be critical to achieving the legitimacy of the project (Zaltman and Duncan, 1977). In addition, it is often easier for the external agent to play a variety of roles that facilitate the process of change, since s/he is not burdened by accumulated organizational perceptions of him/her as an individual.

What about the specific educational context, however? Recently, Butler and Paisley (1978) have predicted that the new few years will see a major change in the locus of change or extension agents:

> In many cases, large city school districts already have the staff of specialists required for self-directed change, and there is little that an all-purpose external linking agent can offer a large district... In fact, a large district as a discouraging assignment for an external linking agent. (p. 28)

The authors estimate that, at present, almost all "linkage" is external to the district. However, they project by 1995 that the balance will have shifted so that the expertise will reside inside the district. (p. 29) Similarly, Schmuck has advocated the development of corps of organizational specialists who can exist within each school district (Schmuck, 1971).

Without getting into an involved debate about the feasibility of such trends, it may be suggested that predictions of such a major shift may be both shortsighted (given the strengths of the external role discussed above) and optimistic (given rapidly rising costs, declining enrollments, and taxpayer resistance to educational frills).

Even more importantly, it must be stressed that the definition of external/internal depends entirely on where one sits. From the perspective of the federal government and most writers concerned with educational policy, any organization that exists below the state level represents a blurry category known as "local." From the perspective of a school-based educator, on the other hand, a specialist situated in the district office may have no better an understanding of the problems of a particular school than an expert called in from several hundred miles away. A number of writers have noted that school systems, as organizational entities, tend to be "loosely linked" (Weick, 1976; Rosenblum and Louis, 1979; Abramowitz and Tennenbaum, 1978). The notion of loose linkages implies that there are boundaries at multiple levels within the system which distort information flows and impede system-wide activities.* The impact of the existence of multiple "layers" in the educational system on the role of change agents is obvious, and the gulf between school and district office in the change process is well documented among the schools involved in the R&D Utilization program. In many cases, school participants differentiated their involvement in a school-based innovation effort from most of the major change activities that had occurred previously, where orders were sent down from the district office with little or no explanation. (See also Gross, Mason and Guiquinta, 1972.) In addition, in many cases school-based practitioners voiced

---

*The recent work of Rosenblum and Louis (1979) has shown that schools that are more "loosely linked" are, in fact, less able to implement comprehensive change projects.

extreme skepticism about the competence of district specialists, who are often seen as educators who could not "make it" in the workd of teaching or administration, and, because they had tenure, were dispatched to a specialist position to defuse the damage that they might create in a line position.

Finally, it is important to point out that a role that is deliberately created "inside" in order to defuse opposition is likely to be no more effective than an outside role. Rogers, et al., in their discussion of the Research Utilization Specialist program in vocational education, comment:

> ...the entire RUS project illustrates the weakness and slippage inherent in a system where research priorities are set at the federal level, largely in terms of system-wide needs, and utilization is sought at the state and local level, whose priorities may be quite different (70)...the RUS represented an "outside graft" onto the state structure, rather than an organized growth out of it...the traditions of federal project grants...reinforce a pattern in which the "federal project" is seen as an activity separate from the normal run...(69)

(3) Teams versus individuals: The case for a team is strongly voiced by Zaltman and Duncan, who can think of no instance in which the extra resources provided through a team do not enrich the change strategy (210-211). The strength of teams are also noted by Moore, et al., for different reasons. Rather than increasing the resources available to the client, teams are seen as providing needed support to the external agent, reducing overload and improving organizational integration of dispersed members (see also Louis and Sieber, 1979). Sebring (1979) notes that teams facilitate the need for different types of expertise at different stages in the change process.

While resources and peer support may be useful functions of teams, there is a limit to the degree to which external agents should be composed of many individuals. Unpublished data from the Study of the R&D Utilization program suggests that teams consisting of more than two or three external people can provide serious system overload for the target population. In cases where the external change team consisted of a larger number of people, school-based

practitioners tended to have a great deal of difficulty understanding the roles that each of the outsiders was supposed to play. In general, the locals tended to single out one or two people to relate to, and the remaining "helpers" vanished into a blurr of undifferentiated meeting attendees. Furthermore, many of the client educators noted that there were major costs of collaboration, which were mainly borne by the local schools. Since meetings involving larger teams were more difficult to schedule, they were sometimes postponed, or held at times that were not optimal for the locals.

The Zaltman and Duncan approach, however, suggests that the team should be composed of an insider "leader" and an external agent. Evidence presented by Greenwood, et al. (1975), suggests that external agents are, in fact, successful only when there is an internal change agent who supports their activities strongly, while the single factor accounting for most of the variance in school innovativeness in Corwin's study of the Teacher Corps (1973) was the quality and innovativeness of boundary personnel located in the University and in the local school. Recently, research on OD programs in schools has suggested that OD training may effectively proceed in a two-stage process, where external agents train a small number of internal agents, who then train their peers (Keys and Bartunek, 1978). The "turnkey" strategy of training has also been seen to work effectively in the transmission of I/D/E/A's Individually Guided Education program from a national office base to over a thousand of local schools that are clustered in teams led by locally-based facilitators. (Moore, et al., 1977) In many instances, the R&D Utilization external agent strategy has been to work through a local "team," that is seen as the local change agent. In some instances, team members, or a single local person has received "change agent" training simultaneously with the external linker. In many cases, participation in a "team" has created leadership where there was apparently a leadership

vacuum: rather than simply selecting natural leaders, the project (or the principal) has chosen to revitalize staff participation and a sense of efficacy through participation in a decision-making group. In general, a preliminary conclusion that could be drawn from the R&D Utilization data is that the stronger the local or internal change agent/team role, the less visible the external role. However, even with a strong internal change agent, the external agent still performs vital functions in stimulating and supporting change activities. This conclusion is also supported by Emrich and Peterson (1977) who find strong correlations between both the involvement of internal and external agents and change.

(4) Personal Characteristics of Agents: While there is little solid empirical work on the personal characteristics associated with effective external agents, there is agreement that certain attributes are desirable. Interviews with linking agents in the National Diffusion Network produced the following list of desirable attributes: (Capla Associates, 1977, as reported in Cates, 1978)

- being candid and straightforward
- having tolerance for ambiguity
- ability to cope with frustrations
- being concerned and supportive
- triggering enthusiasm without going overboard
- being tolerant of different viewpoints
- being flexible

The list specified by Zaltman and Duncan (1977) emphasizes the following:

- technical qualifications
- administrative ability
- interpersonal relations

- motivation and drive
- acceptance of constraints
- development of commitment
- poise and backbone
- political finesse
- poise and maturity

Almost every study that examines linking agents or other external roles makes some mention of personality characteristics. Most of these are on the level of specificity of the above two lists--e.g., they fail to distinguish characteristics that are particularly desirable in an educational consultant or extension agent from those that might be desired of anyone in a relatively important human services profession. In this instance, therefore, the only conclusion is that the avowed importance of the topic has not led to sound research.

Perhaps more importantly, observations made of turnover of linking agents in the context of the R&D Utilization program suggest that the important personality characteristics may be contingent upon the setting. In two cases of turnover which occurred after the first agent had been on the job for a year, some of the schools perceived the new, replacement agent to be an improvement, while others perceived the old agent to be preferable. In both cases, there were distinct differences in the personality styles of the agents, and in their skills and experience. In addition, most agents admit that there are schools that they like working with, and others that they do not care for. The mystery of what makes one external agent effective in a school, whereas another might be ridden out on a rail may be as difficult to solve as determining the reason why some marriages work and others do not. As with marriage counseling, craft rather than research knowledge may be the most valuable.

Research on other extrinsic status characteristics such as educational background, age, race, or sex is very limited; at least in educational settings. Qualitative observations by this author of the work of more than a dozen linking agents suggests that these variables play only a limited, if any, part in explaining external agent behaviors or effectiveness. In addition, evidence from noneducational studies is mixed, except as it refers to homophily (Rogers and Shoemaker, 1971). Forthcoming analysis of the 50 external agents in the R&D utilization program will provide data on the significance of all the above status indicators except racial or ethnic background. Currently, too few external agents are drawn from minority groups to provide a basis for such an analysis.

Agent Behaviors: Strategies in Support of School Improvement

A number of authors have argued for a contingency approach to understanding the relationship between change strategies and change outcomes in different contexts (see Sieber, et al., 1972; Louis and Sieber, 1979; Hood and Cates, 1978). As Hood and Cates state:

> ...it seems likely that a contingency theory of educational linking agentry will eventually emerge simply because it will accomplish two things: first, it will make better sense out of otherwise inconsistent research and evaluation findings; and second, it will provide practical guidance to planners and managers who need to resolve discrepancies between plans and results...(p. 74)

A contingency approach is only useful, however, if it has enough categories to make it reflect reality, and few enough to develop a theory that is sufficiently succinct to make it useable.

A recent attempt to generate a contingency model for choosing change tactics illustrates one half of the dilemma of choosing between the Scylla of theoretical parsimoney and the Charybdis of messy reality. Zaltman, Florio and Sikorski (1977) have attempted to develop a matrix that would allow the potential change agent to evaluate 39 intervention tactics in terms

of 16 "evaluative dimensions." (pp. 92-121) The resultant 634 cell matrix cannot be used without referring extensively to the text, in which the contingencies that would impell the change agent to emphasize one or another "evaluative dimension" more heavily are laid out. While this table might be of some use to an external agent seeking to improve his/her choice of tactics, there is little basis for developing a more refined theory of interventions.

A much more limited approach has been developed by Litwak and Meyer (1965). These authors emphasize that choices of strategies should be conditioned by the distance between the organization and the group to be reached (which is defined very similarly to the concept of homogeneity), the complexity of the message to be transmitted, and the number of people in the target group. Strategies for outreach programs may be rated along a number of dimensions relevant to meeting these needs: initiative, or the amount of effort needed to reach the target population, intensity, or the degree to which the relationship between the external agent and the target population approximates a primary group-like relationship; expertise, or the technical qualifications that are required to transmit the message, and scope, or the number of people that can be reached at a given cost. These sets of dimensions have been used successfully to explain and analyze the outcomes of the external agent efforts in the Pilot State Dissemination Project (Louis, 1975; Louis and Sieber, 1979).

Moving back to Zaltman, Florio and Sikorski (1977), it seems apparent that one of the reasons why the author's discussion of change agent tactics appears more like a laundry list than a useful tool for developing researchable questions about external roles is that the underlying rationale for choice of tactics is unclear. The authors assume that the external agent will choose a set of tactics, and then determine whether they will meet the change needs:

> The change planner should be aware of how his unique array of tactics can be rated, and what this implies. (p. 98)

This approach--planning from the tactical level up--runs counter to any model of rational planning, however. If one picks up two tools at random, it is not likely that they will be the appropriate ones to make a garden; if the objective is to make the garden, the appropriate tools should be determined and selected.

The recent work of Hall, Zigarmi and Hord (1979) has attempted to develop an empirically based taxonomy of intervention levels.* Five different levels of conscious interventions were identified:

- Policies: "a policy is rule or guideline that reflects, directs and legitimizes goals, procedures, decisions and actions of the organization and individuals within the organization." (p. 10)**
- Game Plan*: A game plan is the overall design for the interventions that are taken to implement the innovation. The combination of all of the major components of the innovation implementation effort make up the game plan." (p. 10)

The change tactics identified by Zaltman, Florio and Sikorski can, in fact, be classified as elements of a game plan. These are:

- information/linkage
- product development
- user involvement
- training/installation/support
- level

A complete game plan could, of course, include any combination of the above.

- Strategy: "A strategy...is based on a set of implicit and/or explicit assumptions and theory about how people and organizations function in change. It translates assumptions and theory into actions." (p. 11)

---

*This work is based on extensive observational data collected in a single junior high school which, as part of a Teacher Corps project was attempting to implement a complex innovation with the assistance of an external facilitator.

**The significance of organizational policies is that they condition all choices about interventions that are made, but cannot themselves be easily manipulated by most external or internal actors. Presumably, then, the effecting of change through policy interventions would approximate a "power model" intervention.

Strategies may be best thought of as choices about the level of the initiative, intensity, expertise and scope as they might be applied to any element of the game plan. In addition, the dimensions for evaluating tactics included in Zaltman, Florio and Sikorski can, with some regrouping, effectively be viewed as part of the strategies level.* Figure II presents a modification of Litwak and Meyer's strategy dimensions and arrays the Zaltman, et al. evaluation dimensions against them.

- Tactics: "A tactic is an aggregation of incident interventions that in combination have an effect that is different from the effects of the individual incidents." (P. 12)

Hall, et al., note that, based on their empirical work, it is clear that the strategies of change agent often emerge as a poorly defined extrapolation of an accumulation of tactics. However, when this is the case "the resultant strategy may not necessarily be coherent and supportive of the change effort. All that can be predicted in advance is that there is likely to be some explicit or implicit design of interrelationship across many tactics...(p. 12).

- Incidents: A singular occurance of an action or event. It is the smallest intervention unit. (p. 12)

Zigarmi and Goldstein (1979) note that, in the change process that they studied, it was impossible to understand the higher level interventions without analyzing patterns of incidents.

---

*The strategies that are defined by Zaltman, Florio and Sikorski are, in fact, not strategies but general models of change processes. The authors of that volume use the term model and strategy interchangeably. This author, however, feels that a distinction should be made between them.

FIGURE II

STRATEGIES FOR EXTERNAL AGENTS IN FACILITATING SCHOOL IMPROVEMENT

Strategies I (adapted from Litwak and Meyer, 1966)	Strategies II (adapted from Zaltman, Florio and Sikorski, 1977)*
Initiative	Activity redundancy of messages
Intensity: Outreach intensity	personal contact feedback/interaction follow-up
Client intensity/involvement	immediacy (implementation feedback, timing of) time required user convenience
Expertise	ease of use (for the external agent)
Scope/Cost	repeatability coverage stability

*Two of the Zaltman, Florio and Sikorski dimensions could not be classified as strategies in this framework. These were (1) action implications--this could be viewed more effectively as a game plan, since it refers to the degree to which short and long range goals for the system will be programmed by an external agent; (2) imagery--this could be better classified as a tactic, since it apparently refers to the presence or absence of "hands on" experience for the client group.

The point of the above discussion is, in fact, simpler than it may appear: if one wishes to generate an effective contingency model for external helping roles, it is almost imperative to start at the strategy level, as strategies are defined by Hall, et al. The level of tactics is too discrete and "messy" to serve as a basis for any applied theory, while the game plan dimension is too abstract to meet the needs of those who are engaging in external helping activities. It is to a more extensive discussion of these strategies, as they are embodied in the left hand column of Figure II, that the remainder of this section will turn.

(1) Initiative: The dimension of initiative refers to the amount of energy and effort that the external agent needs to use in order to effectively reach the client or target group. The choice of initiative level is, in part, a policy decision as well as a strategy, for certain types of choices in organizational design will either permit high initiative or impede it. Thus, for example, individual extension agents, such as those deployed by the Pilot State Dissemination Project, have the opportunities to engage in high initiative activities, for the scope of their potential client base was not excessive (in most cases), and they were encouraged to visit schools personally by their organizational locus and position. As Rogers, et al. (1976), point out, the Research Utilization Specialist program discouraged high initiative efforts, since single RUS was assigned to serve all vocational rehabilitation agencies in an entire state. In addition, some external agents are designed explicitly to draw potential clients in, rather than to utilize outreach tactics (see Kalter and Hull, 1976; Butler and Paisley, 1975).

However, within a given type of organizational design, there are many choices that individual agents may make. There is overwhelming evidence to suggest that, in most cases, high initiative (face-to-face, redundant) tactics will be required to stimulate wide interest in a new service that may be offered by an external agent. The level of initiative required to stimulate potential user's interest in research is particularly high, in part because of the poor image that research tends to have in the practitioner community (see, for example, Schmuck, 1968 and Muthard and Crocker, 1975). Thus, for example, the original agents in the Pilot State Dissemination Program were required to engage in individual meetings with teachers and administrators at the school level before they could stimulate any interest at all in using the information retrieval system set up in this program.

Information that does not wear the Scarlet R for research may require somewhat lower initiative. While the outreach activities described by Emrick and Peterson (1977) are highly redundant, they do not involve the one-on-one sessions that were required to persuade the user that ERIC could be useful. Rather, high levels of interest were stimulated by group meetings (conferencing), a technique that did not work effectively in the PSDP.

Another way of interpreting the apparent differences between the amount of initiative required to involve clients in the NON and pilot state programs relates to the functions of knowledge use supported by the program. The PSDP implicitely served all three of the functions that have been identified in this paper, while the NDN program supports only instrumental/decisionistic knowledge use. In the latter case client self selection can be simpler: s/he needs only to ask whether there is any decision that needs to be made which matches the "knowledge base" offered by the NDN project. Convincing a client that information will enlighten or build their capacity for future decision-making may require more persuasion.

Other data suggest that time will reduce the amount of initiative necessary to reach the typical practitioner or school. For example, I/D/E/A initially relied on intensive techniques and existing professional contacts with innovative administrators to "spread the word." As the IGE approach became more well known, and well respected in the field of education, the central office no longer feels it necessary to engage in any direct recruitment at all. Instead, they rely on a network of local facilitators to stimulate local involvement. While the approach is still intensive as, say, compared to an approach that relied on mailed brochures, legitimacy and widespread familiarity of educators have allowed for this less intensive approach. (Moore, et al., 1977.)

Little or no research has been done on the amount of initiative necessary to encourage educators or educational institutions to become involved in knowledge utilization where the knowledge is internally generated. We suspect that, because the use of external experts in these roles has been relatively limited in schools, initial levels required would be high. Again, such knowledge is not seen as a precious commodity for schools at this time.

A final point is that, while the level of initiative required to stimulate clients is related to both the research/craft dimension, and the dimension of time/familiarity, it will inevitably be influenced also by the characteristics of individual clients or client schools. The ever-popular S-shaped diffusion curve (Rogers and Shoemaker, 1971, pp. 128-132) will, in all probability, never apply to the utilization of external agents for knowledge diffusion, because use of knowledge is an on-going process, while adoption is a single time event. Thus, some schools will initiate contact with external agents, and creatively

think of all sorts of reasons to use him/her repeatedly for enlightenment or capacity building purposes as well as to making pressing decisions. Others may come to the fountain of knowledge very late, and drink rarely. If the external agent's goals are to influence the laggards as well as the innovators, some high levels of initiative will always be required. Sieber, et al. (1972) have suggested that linking agents may adjust the levels of initiative, and engage in delegation of activities to internal change agents, in many cases where it is apparent that face-to-face contact and redundancy are not required.

Intensity

Intensity refers to the degree to which the external agent is involved in a long-term relationship with the client, and one which involves a great deal of his/her time. Thus, there are two dimensions along which Outreach intensity must be examined: calendar time and absolute time. Most research on intensity has focused on absolute rather than calendar time. Louis and Sieber (1979) and Louis (1976), for example, found a significant positive correlation between the amount of time that the external extension agent spent with clients and the level of use of the information. Runkel and Bell's (1976) findings suggest that, in the case of OD training, a low level of intensity is worse than no training at all: schools actually decreased their scores on all outcomes measures with three days or less of training.*

Rogers and Shoemaker (1971) also conclude that "change agent success is positively related to the extent of change agent effort" (p. 233). While most of the studies cited by Rogers and Shoemaker do not measure either types of time involvement, those that do measure time apparently corroborate our hypothesis.

We should not ignore, however, the existence of several critical negative findings in this area. Berman and McLaughlin (1977), for example, found no strong correlation between the amount of training received and a variety of implementation measures. Pre-implementation training had small positive effects on the total change perceived by the teacher, and on the continuation of project methods. In addition, quantity of follow-up training after the first year of implementation was positive related to continuation of project materials.

---

*This finding points to an obvious, but often overlooked policy issue in external intervention. Interventions do not have only positive or null effects: they can actually leave the system worse off than before. (Sieber, 1978)

However, while these correlations are all significant at the .10 level, they are so small and so few in number compared to the insignificant correlations between time and outcomes that we can substantially conclude that there was little impact. (See Berman and McLaughlin, p. 107.) More importantly, the presence of outside consultants (as perceived by the teachers--a measure which probably substantially underestimates consultant roles in the project) was not related to outcomes at all.*

Miles, et al. (1978) a more exploratory study of OD in schools exhibits findings that contradict those of Berman and McLaughlin. These author's report, based on a survey of 76 schools using OD, that the intensity of external consultant involvement (number of days spent by external consultants) is significantly, positively related to the impact of the OD program, as is the length of the OD program measured in years. Both of these factors are also strongly associated with positive attitudes toward the OD effort. Intense involvement by external consultants is, however, negatively related to institutionalization of the OD change programs in schools. There is, furthermore, some evidence from this study to suggest <u>why</u> some external consultant intensity may facilitate knowledge use and change, in some instances, while in other cases it does not. The use of structured, pre-packaged training activities were negatively related to OD impact, as was a lack of content orientation in the OD program. It is not unreasonable to conclude from these

*It should be pointed out that the measures used in this part of the Berman and McLaughlin study are somewhat weak given our objective in this paper. The measure of external consultant presence is obtained from teachers on a five point scale. Given the lapsed time since the commencement of the project, this may be viewed as unreliable. In addition, while we may assume that much of the training was, at least indirectly, influenced by external consultants, we have no way of knowing for sure.

findings that consultants may fail to promote effective knowledge use and change when they are physically remote from the districts that they serve, and when they come to the district with an agenda and a method for intervention that is highly structured.* In addition, data presented in Emrick (1977:90) also suggest similar interpreations, as does a recent analysis of linker training in the RDU program (Spencer and Louis, 1980).

A recent study, which attempts to look at intervention intensity in a variety of different research settings represented by journal articles, found that neither type of intensity (calendar time and absolute time) was positively related to study outcomes. (Porras, 1979) While the author states that the methodology of a study using secondary sources is necessarily crude, one cannot ignore the fact that one of the few significant findings indicates that less OD, rather than more, may be related to positive outcomes (p. 169). The author's conclusion regarding this finding is as follows:

> It may be that this outcome reflects the degree of understanding that OD practitioners have about change processes in organizations. Not enough is known about these processes and as a result only certain levels of change are achieved and any extra energy poured into the intervention is dissipated in ways that do not contribute to additional change. As a result a little and a "lot" of input yield the same outcomes. (176)

The author fails to consider, however, that client characteristics, and the nature of the intended change account for this finding: small amounts of external intervention may have large impacts in an organization that exhibits a

---

*It should be pointed out, however, that there are some problems with interpreting the analyses presented in this study, due to the large number of variables (20) entered into the regression equations, and the small number of cases. In addition, a personal communication from Dr. Matthew Miles indicates that zero-order coorelations show a positive association between the use of training materials and impacts, and that he does not, therefore, support the interpretations presented here.

high state of "readiness," while larger amounts may have lesser impact in one that is not ready to go, or is more complex.*

In addition to the question of client characteristics as a factor mediating intensity, some data exists to support the notion that "front end" (early stage in the information utilization process) time and "back end" time have different consequences. The data from the Pilot State Project indicates that "back end" time is more significant in determining whether information will actually be used in an immediate way (Louis and Sieber, 1979). In other words, if the objective of the K-U process is decisionistic, back-end external assistance is clearly critical. Data from the R&D Utilization project indicates, however, that if the objective is capacity building, that front-end time is most critical, for it is during this period when the teachers and administrators are most open to extensive discussion of process, group dynamics, and so forth. When educators are actually faced with a new program to implement, their attention turns very strongly toward the mechanics of actual use. (See Hall, et al., 1973) While there are no studies that examine the "enlightenment" process in any detail, it is probably most closely related to the adult socialization process, which is, according to many, most easily facilitated by a constant (but not necessarily very intense) relationship with the socializing agent in a context where there are many peers undergoing a similar learning experience (Wheeler, 1966).

---

*See Rosenblum and Louis for a discussion of the impact of "readiness" on organizational change. Note that the Northwest Reading Consortium R&D Utilization Project has developed a "readiness" checklist for schools based on external agent experiences in over 30 schools. This checklist will soon be available from The Network, which is compiling a sourcebook of the products produced by the seven R&D utilization projects.

Agent Expertise

It is often assumed that the knowledge utilization process requires external agents who are experts or specialists. Thus, educational administrative structures at local state levels are increasingly characterized by the proliferation of specialist roles that are designed as vehicles through which information services and assistance are delivered to schools. The need for expertise is reinforced by the Agricultural Extension model, which is based on a cadre of county agents with specialized bachelor's degrees, and by the OD movement, which is dominated by individuals who have either university or National Training Laboratories backgrounds. Zaltman and Duncan, for example, place enormous emphasis on the need for technical expertise:

> Perhaps the single most necessary trait the change agent team leader must possess is technical competence...Dangers exist in bringing a person in from an unrelated...field. Alternatively, there may be dangers inherent in selected a generalist without the indepth expertise that may be required occasionally...So-called "paper" credentials are sometimes important for establishing credibility. thus, it may be important for change agents to hold academic degrees, have occupational titles suggesting authority and expertise, and so forth (pp 190-191).

The evidence supporting the need for technical expertise is, however, mixed. First, there is an increasing tendency to discriminate between different types of expertise. Louis (1975) and Spencer and Louis (1979), for example, distinguish between process expertise and content expertise. The content expert is one who is a specialist in a discipline or information-based subject matter relevant to a knowledge transfer/change activity. A process expert, on the other hand, is one who is trained in specific skills related to group dynamics, institution building, and problem solving. Scattered data indicate that different types of expertise may be most potent at different stages of the change process. Kaplan, (1978) distinguishes between client needs in the "Normative Stage" of a change activity, in which the emphasis is upon the human relationships in the organizational setting, and the "Performance Stage" where attention is turned toward

specific task-related activities. Sebring (1979) suggests that the most effective way to deal with this shift is to use an interdisciplinary consultant team, which combines an expert in interpersonal relations with another more expert in the arena most related to the task that is to be accomplished. The strategy of a team which focuses technical expertise on the "back end" (or implementation/change activity) is institutionalized quite effectively, according to Emrick, in the design of the NDN program. While neither the State Facilitator nor the Developer/Demonstrator are typically experts in the sense suggested by Zaltman and Duncan, the former focuses primarily on providing long-term nurturance and the latter on specific task related training in the cases of greatest effectiveness (Emrick, 1979). Crandall's work (1977) implies, on the other hand, that the "front end-process" and "back end-content" distinction may be overly simplistic, and that different mixes at each stage may be more appropriate.

Some questions may be raised, however, about whether there is a need for specialized expertise, at least in many instances, at all. Thus, for example, the most significant inside change agents identified in the Miles, et al (1978) study were largely untrained and non-professional. Their activities contributed, however, in significant positive ways to the success of OD programs in schools (p. 50). Similarly, Louis (1975) found that untrained "generalist" educational linking agents had as much impact upon client use of materials as did specialists from the State Education Agency or local universities. Litwak and Meyer (1966) argue that there is a need for content expertise where the knowledge utilization involves complex, technical information, but that in many cases a generalist is preferable in order to maximize homogeneity of statuses. Ad hoc observations from the study of the R&D Utilization program suggest that those linking agents who were either content or process experts (in terms of prior training) had no greater impact upon clients than those who were generalists. In at least one case, a linking agent felt that her subject matter training (content

expertise) interfered with guiding her client schools' through an effective problem solving process, since they kept expecting her to "cut through the red tape" and produce a solution for them.

The issue of expertise is a critical one, not because the available data uniformly suggest that expertise in an important feature of the external agent strategy, but because it is a significant design issue in the development of external agent roles in educational settings. Currently, considerable effort is devoted to questions of how and what training should be provided to educational extension or change agents (See, for example, Havelock and Havelock, 1973, Butler and Paisley, 1978; Jung, 1976). Despite the concern about providing training to educational linking agents, most training in current federally funded programs does not emphasize the development of new skills, and draws upon a very narrow set of training approaches and resources (Spencer, et al., forthcoming). It is unlikely that major advances in the improvement of training can be made until (1) it is determined that certain types of expertise are, indeed, necessary to improve external agent impacts; and (2) whether the types of expertise that are important can be provided through the training events that are currently sponsored. In sum, the existing information related to expertise is nearly as primitive as that related to personal characteristics of agents (see agove, p). Until these two issues are more finely described, the broader design dilemma of <u>selecting</u> the appropriate individuals to do the task versus socializing recruits with very different characteristics and backgrounds cannot be adequately addressed.

Most significant to the development of a research agenda on expertise is the need to define terms more precisely. In particular, it seems necessary to begin by distinguishing between <u>expertise</u> (that which <u>must</u> be acquired by training) and <u>skill</u> (that which may be either inherent in certain adult individuals or which is most effectively learned by "doing"). Furthermore, in the arena of training, we should discriminate between <u>extensive training</u> (degree programs or courses) versus learned through briefer <u>orientation-type training</u>

(PETC products). In a society of increasing credentialism it is tempting, for example, to equate the external agent's ability to know when and how to intervene in a client's group decision making process (process skill) with the ability to design, administer and interpret survey-feedback activities (process expertise). The level of training needed to support the latter is far greater, however, than for the former. Similarly, there are significant differences between a level of technical knowledge that will allow the individual to bring research results to bear in designing new educational program (content expertise) versus that which will allow the agent to locate appropriate resources and to interpret and evaluate written information in the area (content skill). To the degree that we require content or process expertise in the external agent, existing selection strategies which rely heavily on "retooling" existing populations of teachers and administrators to become facilitators or RDU linking agents is misguided and inefficient: we should be designing degree courses, or investing in specialized certificate programs. However, if skills are what is needed training strategies which focus on increasing the "bag of tricks" available to the agent may be most appropriate.

While existing evidence suggests, that the development of skills through orientation type training may suffice, further exploration is needed prior to heavy investment in training programs.

Referring back to Chart I (p. 21), we may hypothesize, that technical/content expertise is needed primarily in situations where (1) research knowledge is being generated inside the system, and there are no "experts" internally who can carry out the research design and analysis tasks; or (2) where externally generated research knowledge is being used for enlightenment or capacity building. We may assume for example, that research knowledge that is intended for decisionistic use can be packaged in formats which do not require the face-to-face presence of an individual who is able to

synthesize and interpret the findings (although appropriate decision and sound implementation may require the support of generalists). Where there is a need to internalize research findings, in addition to recommended action steps that may result from them, however, the generalist knowledge that a typical educational extension agent brings may be insufficient.

Similarly, we hypothesize that the presence of trained process experts is more likely to be cricical in cases where there is a genuine commitment to use information for capacity building, irrespective of the source of the knowledge. By definition, knowledge use for capacity building involves major system changes and readjustments, which should be enhanced through process consultation. Enlightenment functions would, presumably, benefit little through the application of process expertise, while in most cases the process expertise of a skilled generalist may suffice to assist the organization in moving toward an appropriate system decision.

In sum, there is no reason to anticipate that expertise (as opposed to skill) is needed in the majority of knowledge utilization contexts. It is, however, critical to isolate those where it is needed, and to determine their frequency, and the types of expertise that are most appropriate. Furthermore, skilled generalists should be trained (as are family practitioners in the medical field) to recognize knowldge utilization settings which requires expertise beyond that which they can provide.

Scope/Cost

Scope of Agent services refers to the number of clients that can be managed at any given time by the external agent. A number of comments may be proffered as to the ways in which issues of scope are managed by existing agencies and agents. These are uniformly based on data that is primarily judgemental, however: no studies addressing the issue of the costs and benefits of different levels of scope exist, nor is much attention paid to the impact of increasing

or decreasing the scope of activities of individual agents.* This lack of attention is particularly surprising since it is the key to the development of policies that are justifiable to congressional appropriations committees or other funding sources.

Louis (1975) points out that, in the context of the Pilot State Dissemination Program, scope and intensity were negatively related to one another. Since high initiative and front-end activities were necessary to maintain high levels of clients served, increasing scope was associated with decreasing follow-up activities (in the case of the PSDP, follow-up activities occurred after the delivery of information to a client, and ususally prior to implementation of any change based on th information).

Data from the NDN study (Emrick, 1977) tends to indicate that there is a negative relationship between high scope on the part of Facilitators, and outcome measures. High volume outreach activities tend to generate a client response that makes follow-up activities erratic or non-existent (p. 61). Follow-up activities, on the other hand, are viewed as critical to successful implementation (122).

The question is what is "large scope" versus "small scope" is highly relative, however. In the Pilot State project, a high scope linking agent may have served 10-15 new clients per month, not including follow-up activities on previous clients. In the R&D Utilization project, on the other hand, the number of schools for full time linking agents over a three year period ranged from a low of three to a high of 12. While the RDU program looks very low in scope compared to the PSDP, or the NDN (where a given Facilitator Project tends to serve between three and 25 new adoptions at the district level each year), it is high compared to a typical successful school district OD program, which may involve an external consultant (or a consultant who is hired full time as a OD consultant) for half or full time work over a period of several years so that the N per year is effectively less

than one.

Other programs have different guidelines. For example, the ICS program has a rough guideline that each Facilitator should expect to work with approximately 5-8 new schools each year (Moore, et al, p. 209), while other technical assistance groups, such as the Center for New Schools, and the Creative Teaching Workshop maintain much higher rations of staff to units served (Moore, et al, 1978). Similarly, Follow-Through Sponsors recommend that a single staff member devote most of his/her time to a single site (St. Pierre, et al, Forthcoming).

To summarize the discussion so far, one conclusion should be apparent: there is no clear guideline about scope that can be extrapolated from existing practice. Each organization providing assistance tends to believe that their own preferred scope is the appropriate one: more would mean overload and poor service, less would be wasteful.

Some of the factors that might be considered in determining a research agenda to examine issues of scope are:

- The unit on which scope is measured (individual, school or district) In most cases, the unit of service is the information request or the adoption, and little attention is paid to the scope at the user level. Clearly the demands on an external agent will be greater where the client is a complex multi-level school district, as opposed to an individual teacher; however, providing considerable face-to-face service to all teachers in a school should be differentiated from consulting with one administrator;
- The importance of fidelity. Where the fidelity of a knowledge transfer process is critical, greater effort may be required for training, support, monitoring and evaluation;
- The degree to which the knowledge utilization process involves simple transfer versus the <u>generation</u> of new knowledge. Many technical assistance organizations, such as Follow-Through, or those described by Moore et al, are committed to generating improved knowledge for or by their clients, as well as providing immediate knowledge services. This committment inevitably depresses scope.
- The presence and level of activity of formally designated internal agents. Miles, et all (1978) for example, note that most of the work in a typical school OD effort is handled by an internal agent rather than an external consultant. The formal internal agent role should, however, be differentiated from general level of effort in the client unit.

- The presence or absence of clear incentives to support increased scope versus initiative or intensity. In some instances, it is important to address the existance of powerful environmental conditions which promote quantity over quality of service. In addition, choice of scope may be tied to the agency or agent emphasis upon decisionistic, enlightenment or capacity building objectives.

F. AGENTS AND AGENCIES: THE NEED FOR A BROADER VIEW

A final limitation of most definitions of external agents is that they almost invariably assume that the external agent is an individual disembodied from organizational context. The origins of this assumption are unclear, although again it should be pointed out that the common perception of the agricultural extension agent is as an individual roaming the prairies in a buckboard. The notion of external agent as individual is bolstered by much of the literature and organization development which has been generated largely by university professors who do this research as consultants in their spare time and not from a base of organizational power. This general bias had led to a situation where definitions of linking or change agent or other external roles tend to ignore the roles that are played by organizational entities. Those studies that have looked at the role of organizations as external agents tend to be less frequently cited than those which look at individuals. (See, for example, Moore et al., 1978; and Katter and Hull, 1976.) Many articles which attempt to define the external agent role make a brief obeisance to the role of agencies as well as agents. (See, for example, Havelock, 1969; and Glaser, 1977.) But the theme of agencies is rarely well developed. This fact has hampered the development of both theories and research of intervention which involve multiple rather than single actors on the external agent team. Current research projects addressing the development of organizational networks for knowledge utilization may begin to fill this gap. These are being carried out under funding by NIE, and an intendedto examine the ways in which three different types of organizations (Intermediate Service Agencies,) develop networking relationships with schools in order to facilitate knowledge use.

A recent paper by Clark and Latto (1978) considers the functions of the university in the knowledge transfer system. While the data upon which the discussion is based is limited*, there is strong reason to consider that universities are major contributors to outreach activities in support of knowledge utilization.

In many cases, university involvement is probably a consequence of ad hoc consulting activities developed by individual professors, and do not represent any institutional committment. Havelock (1977) has commented, for example, that in one state the professors at local universities presented a barrier to a systematic development of information networks. Each professor strove to establish special consulting arrangements with districts as a means of increasing their salary and research opportunities, and they did not look favorably upon new institutional commitments that would alter these arrangements.

In many other cases, however, universities have taken on institutional committments to act as change agents in local schools. The Teacher Corps program is one of the most well known examples, but our only information about the success with which they have played their role dates from the early phases of program implementation (Corwin, 1972). (Later program efforts have attempted to address some of the weaknesses identified in Corwin's evaluation.)

Conventional wisdom suggests that the image of the university as a provider of external assiztance for knowledge utilization is very mixed. Many, for example, cite the "gap" between the way in which practitioners and academics view the world (Schmuck, 1968) as a factor which limits the usefulness of university designed efforts to assist schools. It may be suggested that this

---

* The data is based on self reports of K.U. activities using very gross categories.

tarnished image is due to the fact that universities are better equipped to provide assistance in enlightenment functions or capacity building functions (if there is substantial expertise in OD) but that they are frequently less well equipped to carry out the knowledge transfer required to support good decisions about programming or structure.

An examination of the ways in which different organizational units that are currently involved in K.U. functions in schools may have specialized, either in a particular cell in Figure I, or in a particular K.U. function seems a fruitful place to begin. Mapping current activities can and should be related to other aspects of organizational capacity (the work of NTS (1979) in measuring capacity can be taken as a model from which to start). In addition to taking the potential provider as a unit of analysis, the role of organizations as external assistants should also be examined from the comparative perspective that can only be provided by the consumer system. Case studies and/or surveys of different distict experiences with external agencies of different types would be very useful in this regard.

One of the critical questions that deserves greater attention is posed by Moore, et al. (1978): What are the characteristics that are associated with agency "success." On the basis of six case studies of exemplary outreach technical assistance groups, Moore and his colleagues isolated a large number of factors which they felt were associated with smooth internal functioning and a reputation for client impacts. Their sample, however, was limited only to independent agencies with a "messianic" set of objectives, e.g., in Katter and Hule's (197) terminology, they were all simultaneously high on their product and audience orientation. No similar research has been conducted on the more common forms of agencies that provide direct information services to schools, or on agencies which carry a less specialized set of objectives, or which may carry direct service goals as only part of their general mission.

SUMMARY: A RESEARCH AGENDA ON THE ROLE OF EXTERNAL AGENTS IN KNOWLEDGE UTILIZATION

The debate between supporters and opponents of external roles in facilitating knowledge utilization in schools is broader than the question of whether or not they have an impact. Those who argue in favor of an external role would claim that government policies which foster the proliferation of programs, studies and knowledge, as well as technological information systems to make this knowledge accessible, are foolish in the absence of systems that will encourage the transmission of knowledge to potential users. Opponents, on the other hand, argue that the marginal returns in terms of improved schooling from the use of external agents and existing knowledge resources outweigh the investment needed to build a system that might have an impact. External technical assistance, it is argued, is too costly to implement on a large scale and it is therefore more practical to bolster a "do-it-yourself" approach to school improvement. Others point out that there is little evidence to suggest that we really know how different curricular teaching approaches and classroom organizations affect educational outcomes and that until we have such evidence, designing, implementing, and supporting an extension to system promote change is an inappropriate use of resources. Like most policy debates, this one is unlikely to be fully resolved by the incremental accumulation of sound research results. Nevertheless, it is clear that an appropriate research agenda (which would include improved conceptualizations of the problem, in addition to collecting empirical data) could improve immeasurably the grounds upon which the debate is held. In particular, one occasionally gets the feeling in reading literature on school change processes that the writers are, in fact, discussing entirely different phenomena. The problem of lack of congruence in the imagery which is applied to the external role is particularly problematic.

The above discussion has pointed to many specific gaps in our knowledge about the roles of external agents in the knowledge utilization process in educational settings. These remarks have ranged from very specific hypotheses that might be addressed in future research, to more general statements about the inadequacy of existing information or theory in broad areas. In the following section, the objective is to summarize the broader research issues that have been raised.

First, the overall thrust of the discussion has pointed to the serious lack of theoretical frameworks in which the study of external roles might be located. It has been proposed that one of the major gaps is the lack of attention to the functions of knowledge use for educators, and the different types of knowledge that exist to be used. This paper has proposed a framework for identifying critical types and functions, and has attempted to show throughout how the framework (presented in Figure I) is applicable to current research and future research questions.

One of the main deficiencies of existing research is the emphasis upon a single function of knowledge use (instrumental decisionistic) and a single type of knowledge (externally generated research information). While scattered research efforts exist in other cells, they are either outside of the mainstream of educational knowledge use research, or only marginally related to education. This situation will change quite rapidly, as current research projects at NIE have and will continue to address use of other types of knowledge. However,

current research interests in the ways in which district use internally generated research information are, in many ways, even less well integrated with a broader frame of inquiry on knowledge use in schools. Research on district use of evaluation information also tends to ignore the role of external actors, and to be unrelated to existing knowledge about the role of consultants and change agents in knowledge utilization processes.

The limited context of knowledge use research has placed equal limitations on the research about the role of external agents. Most inquiry has viewed the external agent largely within the context of the "technological push" framework, where schools are seen as adopters of better research products whose topics are defined according to a federal agenda rather than as participants in the process of determining what types of information would be useful. It is clear that any research agenda in this area must address this major gap.

One of the derived research gaps, which was discussed on pp. 27-29, is the lack of any good research on what schools and educators want in the way of knowledge and assistance in knowledge use. A simple needs assessment approach would, in all probability, be an inadequate way of approaching this question: what is needed is some better synthesis of existing valued uses of external agents, coupled with a projective, exploratory inquiry into existing needs that might be filled through external assistance.

Such an inquiry would need to take into account the costs and benefits of using external versus internal agents, and the relationship between such individuals. This issue is, in general, one of the least well understood in the field, and one which is perhaps the most critical to the design and planning of effective knowledge utilization systems at both the local, state and federal level. Again, the state of knowledge seems to be so limited that a research agenda should proceed through several phases, perhaps beginning with a more systematic review of existing case studies (using techniques such as

those developed by Yin (1976)), exploratory case analysis of on-going change efforts, and only secondarily survey or field experimental activities.

In addition, summative questions about the relative impace of internal and external agents should be postponed until there is an improved understanding of the relationships between the two.*

Information on skills, skill mix, and the use of teams of agents is extremely limited, although the topic is mentioned frequently in case reports. Again, the state of the art is sufficiently primitive to indicate that the best approach is to conduct very limited reviews of existing case materials and/or limited exploratory analyses to investigate this topic.

The area of personal characteristics of linking agents associated with "success" is probably one of the most murky of all those raised. In the opinion of this author, it is also one that should receive very low priority until a better understanding of the dimensions of agent activities can be understood. Existing common sense lists of characteristics are probably succinct to provide guidance to program planners faced with a choice between individuals for this job. Until there is evidence that psychological testing would be appropriate as a selection mechanism, however, this area of research would appear to have little policy payoff at any level.

One of the most surprising features of the existing set of research is the lack of detail about agent behaviors. The main cause of this gap appears to be the emphasis upon studies which involve multiple sites, and cross-sectional designs. The multiple site problem makes it difficult to obtain indepth evidence about what agents actually do in any detail, particularly at the level of tactics or incidents (which Zigarmi and Goldstein report to be the most

---

* Note that the analysis of data from the RDU project will address this relationship, and later results may shed light on the research needs. These data will not be available until mid 1980.

critical to understanding patterns of intervention). It may be suggested that, in addition to specific information that may be needed to complete our understanding of how different agent strategies affect client knowledge use behaviors, that we need also to develop better understanding of tacits. This information is particularly useful in the design of improved orientation-type training, and may also contribute to our ability to interpret accumulating knowledge about strategy impacts. Again, it should be emphasized that research on strategies and tactics must be firmly tied to a framework for understanding knowledge utilization settings in schools, and to an improved understanding of "demand-pull" based knowledge utilization as well as "technological push".

If we examine priorities among the different categories of strategy that were identified, it is clear that information needs are most pressing in the areas of expertise and scope/cost. In both of these cases, the conceptualization of the research problems or issues are less well developed, while the policy implications are very significant. Least critical is the study of initiative, with the possible exception of unique cases which pose difficult access problems (such as urban districts, which seem less likely to make effective use of external agents).

The discussion of research gaps finished with the recommendation that greater attention be paid to the ways in which organizations act as external agents. Some ways of approaching this relatively poorly research area would be to model organizational information networks at the user level (which would begin also to identify the range and types of organizations that act as salient external agents), and to extend the preliminary work of Moore, et al to different types of agencies. In addition, particular attention should be paid

to some types of agencies, particularly those that are conscious agents, those that have power relationships with school districts, and those (like universities and intermediate service agencies) which have considerable potential for becoming more self-consciously audience and information-use oriented at the institutional level.

Some additional final comments may be made about research that is not needed, either because it addresses questions that are not highly salient to school or federal policies, or because they are likely to advance our current understanding:

- additional literature reviews of non-empirical literature. Existing reviews, such as Hood and Cates (1978) are more than adequate, additional syntheses that are not based on empirical data and specific questions would be redundant;
- further quasi-evaluative studies of on-going programs that are not specifically designed to address a limited set of research questions. Two currently funded large-scale studies (the study of the R&D Utilization Program, and the study of the Office of Education Dissemination Activities) are intended to address a variety of broad exploratory issues related to external roles. The future need will be for smaller, more focused studies. We do not need any more research to arrive at the conclusion that the role of extension agents in schools is ambiguous and poorly defined;
- large scale action research programs that are not designed to address specific, significant policy or research questions. The current state of the art suggests that a more fruitful approach would be to engage in a period of smaller scale, exploratory studies (for example: how best to reach urban schools) and field experiments before engaging in a major service delivery experiment.

Bibliography

Abramovitz, S. and E. Tennenbaum. High School '77. Washington, D.C.: National Institute of Education, 1978.

Alkin, M., Daillak, R., White, P. Using Evaluations: Does Evaluation Make a Difference? Beverly Hills: Sage, 1979.

Archibald, K. The Utilization of Social Research and Policy Analysis. Doctoral dissertaion, Washington University. Ann Arbor, MI: University Microfilms, 1968.

Berman, P. and M. McLaughlin. Federal Programs Supporting Educational Change. Vol. VII: Factors Affecting Implementation and Continuation. Santa Monica, CA: Rand Corporation.

Blumberg, A. OD's Future in Schools--Or is There One? Education and Urban Society, 8, 1976, 213-227.

Burchinal, Lee. Needed: Local, One-Step Information Centers. Educational Researcher, Special Supplement, 1967, 8-9.

Butler, M. and W. Paisley. Factors Determining Roles and Functions of Educational Linking Agents. San Francisco, CA: Far West Laboratory, 1978.

Butler-Paisley, M. and W. Paisley. Communication for Change in Education: Linkage Programs for the '70s. Stanford, CA: Institute for Communication Research, Stanford University, 1975.

Campeau, P., J. Binkley, P. Treadway, J. Appleby, and B. Bessey. Final Report: Evaluation of Project Information Package Dissemination and Implementation. Palo Alto, CA: American Institutes for Research, 1979.

Capla Associates. National Diffusion Network Skills Taxonomy. Rochelle Park, NJ: 1977

Cates, C. A Preliminary Inventory of Educational Linking Agent Functions with Brief Explanations. San Francisco, CA: Far West Laboratory, 1978.

Center for the Advanced Study of Educational Administration. Change Processes in the Public School. Eugene, OR: University of Oregon, 1965.

Chabotar, K. and D. Kell. Linking R&D to Local Schools: A Program and Its Policy Context. Cambridge, MA: Abt Associates Inc. 1978.

Charters, W.W. and R.J. Pellegrin. Barriers to the Innovation Process: Four Case Studies in Differential Staffing. Educational Administration Quarterly, 9. 3-14.

Bibliography

(continued)

Corwin, R. G. Reform and Organizational Survival: The Teacher Corps as an Instrument of Educational Change. New York: Wiley-Interscience, 1973.

Crandall, D. Training and Supporting Linking Agents. In N. Nash and J. Culbertson (eds.). Linking Processes in Educational Improvement. Columbus, OH: University Council for Educational Administration, 1977.

Derr, C.B. O.D. Won't Work in Schools. Education and Urban Society, 8, 1976, 227-241.

Dershimer, R. The Federal Government and Educational R&D. Lexington, MA: Lexington Books, 1976.

Emrick, J. and S. Petersen. Evaluation of the National Diffusion Network, Vol. I. Menlo Park, CA: SRI, 1977.

Fullan, M., M. Miles and G. Taylor. OD in Schools--The State of the Art, Vol. II: Review of Research in OD. Toronto: Ontario Institute for Studies in Education, 1978a.

Fullan, M., M. Miles and G. Taylor. OD In Schools--The State of the Art, Vol. IV: Case Studies. Toronto: Ontario Institute for Studies in Education, 1978b.

Gideonse, H. Educational Research and Development in the Unites States. Washington, D.C.: U.S. Government Printing Office, 1970.

Glaser, E. Putting Knowledge to Use: A Distillation of the Literature Regarding Transfer and Change. Human Interaction Research Institute, 1976.

Glaser, E. Utilization of Applicable Research and Demonstration Results. Journal of Counseling Psychology, 1965, 12, 2: 201-205.

Goodlad, J. Dynamics of Educational Change. New York: McGraw Hill, 1975.

Granovetter, M. The Strength of Weak Ties. American Journal of Sociology, 1973, 78: 1360-1380.

Greenwood, P., D. Mann and M. McLaughlin. Federal Programs Supporting Educational Change. Vol. III: The Process of Change. Santa Monica, CA: Rand Corporation, 1975.

Hall, G., S. Loucks, W. Rutherford and B. Newlove. Levels of Use of the Innovation: A Framework for Analyzing Innovation Adoption. The Journal of Teacher Education, 1975, 26, 1: 52-56.

Bibliography

(continued)

Hall, G., P. Zigarmi and S. Hord. A Taxonomy of Interventions: The Prototype and Initial Testing. Paper presented at the 1979 meetings of the American Educational Research Association.

Hamilton, L.S. and J.E. Muthard. Research Utilization Specialists in Vocational Rehabilitation. Gainesville, FL: Rehabilitation Research Institute, University of Florida, 1975.

Hamilton, L.S. and Muthard, J.E. Research Utilization Specialists in Vocational Rehabilitation: Five Years of Experience. Rehabilitation Counseling Bulletin, 1975, 2: 377-386.

Haugerud, A., J. Gorman, A. Murphy, W. Beecroft, L. Rokovitz and D. Campbell. School Improvement Efforts Via Linkers and Linkage Systems. Olympia, WA: Northwest Reading Consortium, Washington State Department of Education, 1979.

Havelock, R.G. and M.C. Havelock. Training for Change Agents. Ann Arbor, MI: Institute for Social Research, University of Michigan, 1973.

Havelock, R.G. Dissemination and Translation Roles. In T.L. Eidell and J.M. Kitchel (eds.). Knowledge Production and Utilization in Educational Administration. Eugene, OR: CASEA, University of Oregon, 1968.

Havelock, R.G. Planning for Innovation. Ann Arbor, MI: University of Michigan, Institute for Social Research, 1969.

Havelock, R.G. and Mann, F.C. Research and Development Laboratory Management Knowledge Utilization Study. Ann Arbor, MI: Institute for Social Research, University of Michigan, 1968.

Hood, P.D. and C.S. Cates. Alternative Approaches to Analyzing Dissemination and Linkage Roles and Functions. San Francisco, CA: Far West Laboratory, 1978.

Hovland, C.I. and W. Weiss. The Influence of Source Credibility on Communication Effectiveness. Public Opinion Quarterly, 1951, 15: 635-650.

Hutchins, C.L. Options Paper on an NIE Extension Agent Initiative. Draft paper, NIE, 1977.

Jaques, E. The Changing Culture of a Factory. London: Tavistoch, 1951.

Jones, G. Planned Organizational Change: A Study in Change Dynamics. New York: Praeger, 1969.

Bibliography

(continued)

Jung, C. Training Materials and Training for OD In Education. Education and Urban Society, 1976, 8: 145-158.

Jung, C. and R. Lippitt. The Study of Change as a Concept. Theory into Practice, 5, 1, 1966.

Kaplan, R. Stages in Developing a Consulting Relation: A Case Study of a Long Beginning. Journal of Applied Behavioral Science, 1978, 14: 43-60.

Katter, and Hull

Keys, C. and J. Bartunek. Organization Development in Schools: Goal Agreement, Process Skills, and Diffusion of Change. Journal of Applied Behavioral Science, 1979, 15: 61-78.

Lindbloom, C. and D. Cohen. Useable Knowledge. New Haven, CT: Yale University Press, 1979.

Lippitt, R. The Process of Utilization of Social Research to Improve Social Practice. In W.G. Bennis, K. Benne and R. Chin, The Planning of Change (2nd edition). New York: Holt, Rinehart and Winston, 1969. 142-148.

Litwak, E. and H. Meyer. A Balance Theory of Coordination Between Organizations and Community Primary Groups. Administrative Science Quarterly, 1966, 11: 31-58.

Louis, K.S. The Development of Linking Organizations in an Educational Context. Ph.D. dissertation, Columbia University. Ann Arbor, MI: University Microfilms, 1975.

Louis, K.S. Dissemination Information from Bureaucracies to Local Schools: the Role of the Linking Agent.

Louis, K.S. and S.D. Sieber. Bureaucracy and the Dispersed Organization. New Jersey: Ablex, 1979.

Louis, K.S., J. Molitor, G. Spencer and R. Yin. Linking R&D with Local Schools: An Interim Report. Cambridge, MA: Abt Associates Inc., 1979.

Lyon, C. Evaluation and School Districts. Los Angeles: Center for the Study of Evaluation. 1979.

Mann, D. The User-Driven System and a Modest Proposal. In D. Mann, (ed.). Making Change Happen. New York: Teachers College Press, 1978, 285-307.

Miles, M. Diffusing OD in the Schools: The Prospects. Education and Urban Society, 1976, 8: 242-254.

Bibliography

(continued)

Miles, M., M. Fullan and G. Taylor. OD in Schools: The State of the Art. Vol III: OD Consultants/OD Programs in School Districts. Toronto: Ontario Institute for Studies in Education, 1978.

Miles, M. and R. Schmuck. Improving Schools Through Organization Development: An Overview. In Organization Development in Schools, Palo Alto, CA: National Press, 1971, 1-29.

Moore, Donald, E. Schepers, M. Holmes, K. Blair and others. Assistance Strategies of Six Groups that Facilitate Educational Change at the School Community Level. Chicago, IL: Center for New Schools, 1977.

Nash, N. and J. Culbertson. "Introduction." In N. Nash and J. Culbertson (eds.). Linking Processes in Educational Improvement. Columbus, OH: University Council for Educational Administration, 1977, 1-5.

Pelz, D. and F. Andrews. Scientists in Organizations. New York: Wiley and Sons, 1966.

Piele, P.K. Review and Analysis of the Role, Activities and Trianing of Educational Linking Agents. Eugene, OR: University of Oregon, 1975.

Pincus, J. Incentives for Innovation. Review of Educational Research, 1978, 44.

Porras, J.I. The Comparative Impact of Different OD Techniques and Intervention Intensities. Journal of Applied Behavioral Science, 1979, 15, 156-178.

Rein, M. and S. White. Policy Research: Belief and Doubt. Policy Analysis, 1977, 3, 239-271.

Rasperry, W. "For Ailing Schools Home Remedies are Best" Washington Post, February 13, 1978.

Rogers, E. and F. Shoemaker. Communication of Innovations. New York: Free Press, 1971.

Rogers, E., J. Eveland, and A. Bean. Extending the Agricultural Extension Model. Stanford, CA: Stanford University, Institute for Communication Research, 1976.

Rosenblum, S. and K. Louis. Stability and Change: Planned Change in Ten Rural School Districts. Cambridge, MA: Abt Associates Inc., 1979.

Runkel, P.J. and W.E. Bell. Some Conditions Affecting a School's Readiness to Profit from OD Training. Education and Urban Society, 8, 1976, 127-144.

Bibliography

(continued)

Sabatier, P. The Acquisition and Utilization of Technical Information by Administrative Agencies. Administrative Science Quarterly, 1978, 23: 396-417.

Sarason, S., C. Carroll, K. Maton, S. Cohen and E. Loretntz. Human Services and Resource Networks. San Francisco, CA: Jossey-Bass, 1977.

Sarason, S. and E. Lorentz. The Challenge of the Resource Exchange Network. San Francisco, CA: Jossey Bass, 1979.

Schein, E.H. Organization Psychology (2nd Ed.) Englewood Cliffs, N.J.: Prentice Hall, 1970.

Schmuck, R. Developing Teams of Organizational Specialists. In Schmuck, R. and M. Miles (eds.). Organization Development in Schools. Palo Alto, CA: National Press Books, 1971.

Schmuck, R. and M. Miles (eds.) Organization Development in Schools. Palo Alto, CA: National Press Books, 1971.

Schmuck, R., P. Runkel and D. Langmeyer. Improving Organizational Problem Solving in a School Faculty. Journal of Applied Behavioral Science, 1969, 5: 455-482.

Scurrah, M., M. Shani and C. Zipfeld. Influence of Internal and External Change Agents in a Simulated Educational Organization. Administrative Science Quarterly, 1971, 16: 113-120.

Sebring, R., Knowledge Utilization in Organization Development. Journal of Applied Behavioral Science, 15, 1979: 194-197.

Sieber, S., K.S. Louis and L. Metzger. The Use of Educational Knowledge. New York: Bureau of Applied Social Research, Columbia University, 1972.

Sieber, S.D. The Solution As Problem: An Essay on the Principle of Reverse Consequence. Draft paper, 1978.

Stearns, M. S. Evaluation of the Field Test of Project Information Packages. Menlo Park, CA: Stanford Research Institute and RMS Research Corporation, 1977.

Spencer, G. and K.S. Louis. The RDU Linking Agent Study: Role Definitions of Linking Agents. 1978.

Spencer, G. and K.S. Louis. Training and Support of Educational Linking Agents. 1980.

Bibliography

(concluded)

Weick, K.Educational Organizations as Loosely Coupled Systems. Administrative Science Quarterly, 1976. 21 pp. 1-19.

Weiss, Carol. Research for Policy's Sake: The Enlightenment Function of Social Research. Policy Analysis, 1977, 3: 531-545.

Wheeler, S. The Structure of Formally Organized Socialization Settings in Brim, O and Wheeler, S. Socialization After Childhood. New York:..... Wiley, 1966.

Zaltman, G., D. Florio and L. Sikorski. Dynamic Educational Change. New York: Free Press, 1977.

Zaltman, G. and R. Duncan. Strategies for Planned Change. New York: Wiley Interscience, 1977.

Zigarmi, P. and M. Goldstein. A Mapping Technique for the Analysis of Ethnographic Data. Paper presented at the 1979 annual meeting of the American Educational Research Association.